AN HBJ PUBLICATION

JULY 1986/$2.50

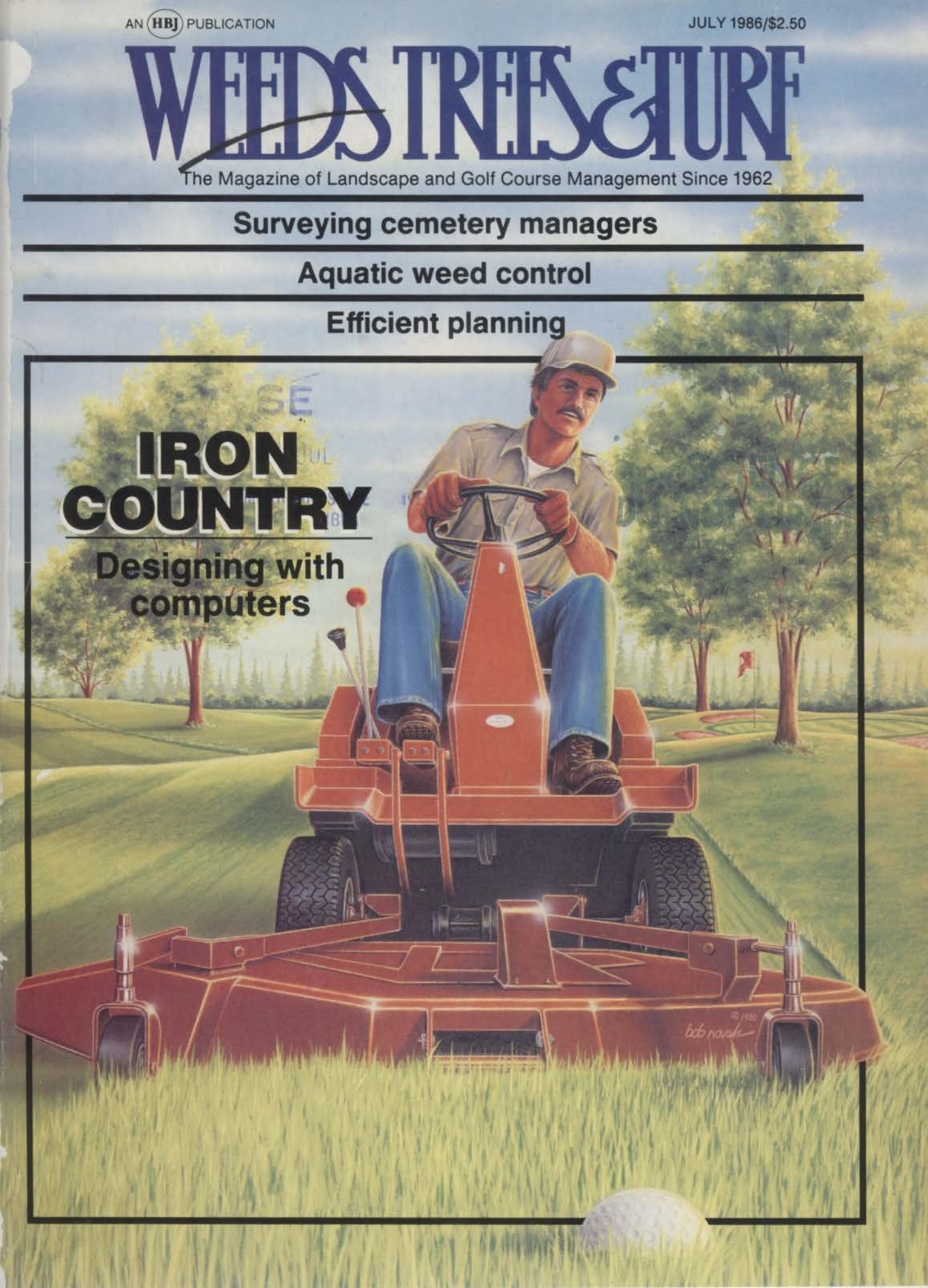
WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962

Surveying cemetery managers

Aquatic weed control

Efficient planning



IRON COUNTRY

Designing with computers

New DURSBAN: No stink, no squawk, no bugs.

New formulation reduces neighbor complaints.

Let's face it. DURSBAN* insecticide used to have a very pronounced air about it. One that could even trigger complaints occasionally.

But no more.

New technology.

DURSBAN Turf Insecticide now contains a more highly purified grade of chlorpyrifos, its active ingredient. And minimizing the impurities has significantly reduced the odor.

Apply without worry.

That means you can apply DURSBAN Turf Insecticide whenever it's needed, even on the hottest days. Without worrying about odor-triggered complaints from neighbors or customers. Applicators, who live with it all day long, will appreciate it, too.

Insect control remains unparalleled.

Your chances of getting called back for re-treatment are slight, too. DURSBAN is famous for effective control of most any surface feeding insect you'll encounter. And for its 6 to 8 weeks of residual control, to catch late-arriving insects.

DURSBAN bonds tightly to organic matter in soil as soon as it dries. So it stays put and keeps controlling. Won't wash away. And you can use it with confidence, because it has a proven human safety record.

First in the industry.

DURSBAN insecticide's first label was for turf applications, indicative of Dow's continuing commitment to the lawn care industry. And DURSBAN has earned the industry's respect for its broad spectrum effectiveness, residual control and cost efficiency... which all add up to today's best insecticide value.

New **DURSBAN** Turf Insecticide is available in 2.5 gallon plastic jugs and 55 gallon drums. If you prefer a wettable powder, you can get the same advantages in DURSBAN 50W, now offered in water soluble packets for the easiest, quickest mixing and measuring ever. Whichever you choose, you'll get fewer complaints—from neighbors, or applicators. Get the full story from your chemical distributor today.

DURSBAN*

The "no offense" insecticide.

DOW

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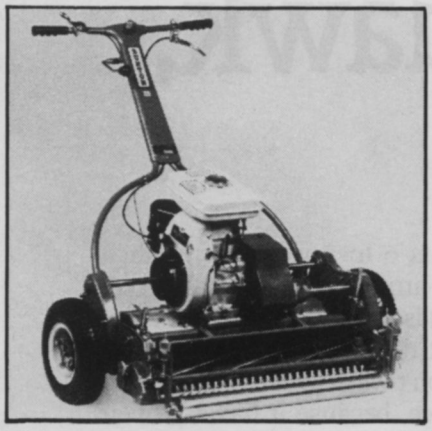
JULY 1986, VOLUME 25, NUMBER 7

WEEDS TREES & TURF

The Magazine of Landscape and Golf Course Management Since 1962



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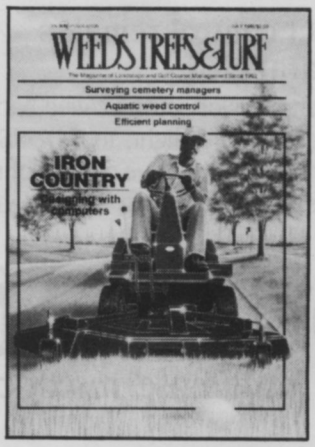

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by Bob Novak

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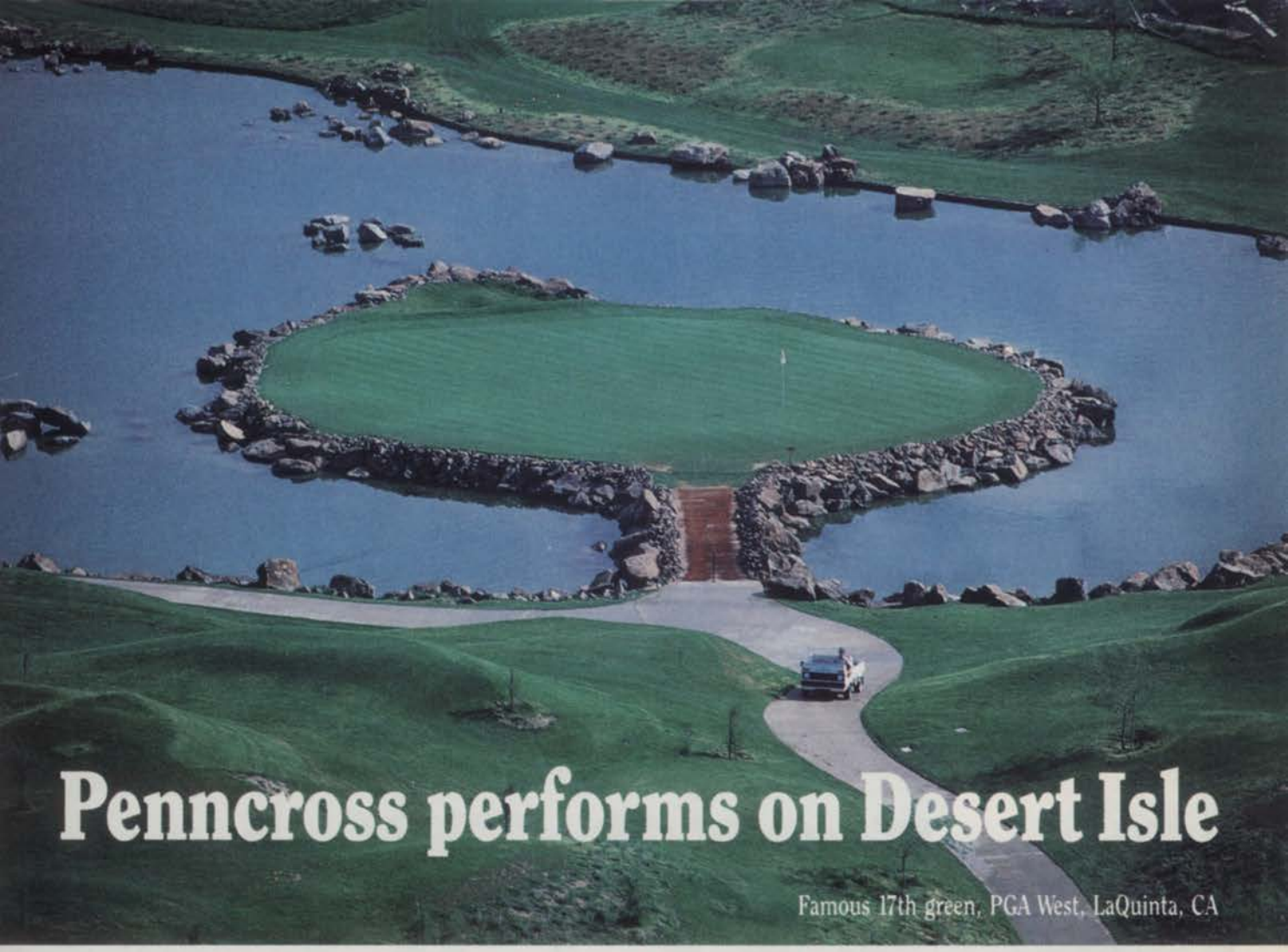


Penncross performs on Desert Isle

Famous 17th green, PGA West, LaQuinta, CA

Penncross not only survives, but thrives on all 18 greens at this innovative Pete Dye designed course.

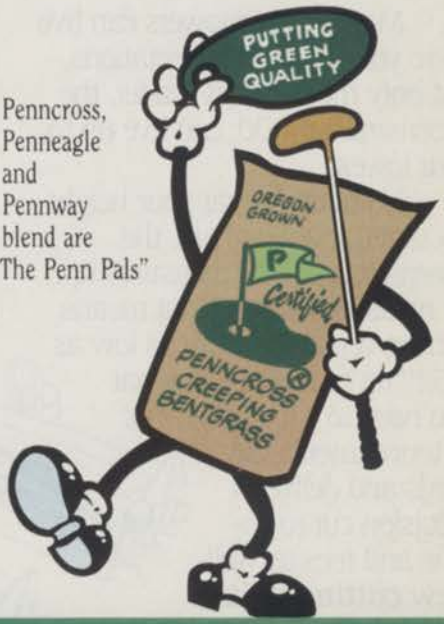
You've seen this awesome 17th green in pictures, or maybe you've had the good fortune of playing this 147 yard challenge, but we're reasonably sure you didn't know that it's Penncross creeping bentgrass. Television announcers won't tell you and magazines don't print it, but the putting greens that have made more champions on some of the greatest courses in the world are Penncross.

PGA West is a revolutionary new course with target greens, stadium spectator mounds and punishing hazards. Why would such an innovative designer use a strain of bentgrass that's been around for so many years?* We maintain that there is no better all-around bentgrass anywhere!

Some people say that bentgrass won't survive the intense sunbelt heat. We have evidence to disprove that notion. Penncross, and its Penn Pal, Penneagle have grown in popularity on courses from California to Florida . . . where bermudagrass used to reign.

Pete Dye specified Penncross for *this* desert isle, as he did for his famous Sawgrass island green in Ponte Vedra, Florida. Penncross is no ordinary putting green grass . . . and Pete Dye is no ordinary designer.

Watch Penncross perform in the *Skins Game* at PGA West, Nov. 29 and 30, 1986.



Penncross, Penneagle and Pennway blend are "The Penn Pals"

*Penncross is a tried and true cultivar developed by Professor Burt Musser at Penn State University and released in 1955.

Penncross is marketed by **TEE-2-GREEN CORP** / PO Box 250, Hubbard, OR 97032 / 1-800-547-0255 / TWX 510-590-0957

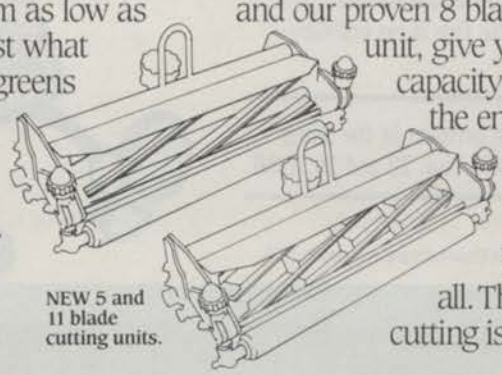
Circle No. 136 on Reader Inquiry Card

The Gree 300 lives lowest ex

Most greensmowers can live up to your highest expectations. But only the industry leader, the Greensmaster 300, can live up to your lowest.

No matter what your height of cut requirements are, the Greensmaster 300 measures up. *Or* measures down. That means cutting versatility from as low as 3/32" up to 11/16". Just what you need to cut your greens to tournament standards and deliver a precision cut to aprons and tees as well.

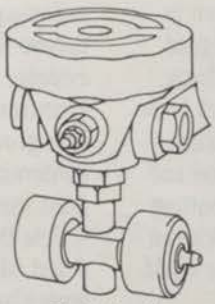
New cutting units and Toro's Variable Speed Kit.



NEW 5 and 11 blade cutting units.

The perfect combination for a precision cut.

What makes the precision cutting of the Greensmaster 300 possible? The correct choice of cutting blades for your desired height of cut. Our new 5 and 11 blade cutting units, and our proven 8 blade unit, give you the capacity to cover the entire height-of-cut range for the truest ball roll of all. This precision cutting is achievable in combination with Toro's exclusive Variable Speed Kit. It allows you to select a consistent ground speed while maintaining a constant, even clip.



Single-hand bedknife adjustment knob.

Another exclusive feature for varying cutting conditions.

The Greensmaster 300 also features an exclusive cutting unit attitude leveling adjustment through its rear roller. This lets you set the correct attack angle of the bedknife for varying cutting conditions.

Additional cutting versatility at the flip of a handle.

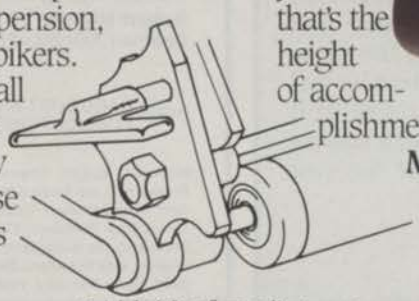
With Toro's quick height-of-

nsmaster®
up to your pectations.

cut kit you can easily change your height-of-cut to 5 different levels. Each flip of the handle alters the height-of-cut by .100 inch within a total range of 1/2" above the cutting unit bench setting.

For further versatility and productivity, Toro provides a full range of bedknives, rollers, combs and brushes. Plus options that include direct suspension, thatchers and spikers.

Put them all together and it's easy to see why more Golf Course Superintendents depend on the Greensmaster 300 than any other riding greensmower in the world. And why you should, too. For precision cutting, only the Greensmaster 300 lives up to your lowest expectations. And in a profession like yours, that's the height of accomplishment.



Quick height-of-cut adjustment.

Greensmaster 300.

More information available from your Toro Distributor.

Contact your local Toro distributor for additional information or a demonstration. Or write The Toro Company, Commercial Marketing/Dept. G3, 8111 Lyndale Ave. So. Minneapolis, MN 55420.

TORO®

The professionals that keep you cutting.

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Circle No. 143 on Reader Inquiry Card

Jerry Roche

Ken Kuhajda

Heide Aungst

New insecticides fight pests naturally

■ Some trees have a natural insect repelling ability, and several companies want to cash in on it.

Western red cedar is one tree which naturally wards off pests. Cedar-Al products Inc. in Clallam Bay, Wash., is marketing a mixture of cedar essence and water, called Cedar Oil.

The company currently sells $1 million annually in room deodorizers. But preliminary tests show that Cedar Oil is effective against gypsy moths. If the EPA approves Cedar Oil as a pesticide, the company's sales could jump to $20 million.

"Natural pesticides are clearly the wave of the future," says Robert Metcalf, professor of entomlogy at the University of Illinois.

Stimson Lumber Co. of Forest Grove, Ore., wants EPA approval for a natural insecticide which fights pine beetles. Norpine, made from a chemical found in pine trees, is being tested by the Agriculture Department and the Forest Service.

A British Columbia company, Safer-Agro-Chem Ltd. makes insecticidal soaps from the fatty acids found in trees. The soaps kill insects which prey on Douglas fir, spruce, and other trees, along with fruit and vegetable crops.

Pesticide accidents decreasing

■ The average number of lethal pesticide accidents in the United States is decreasing, according to reports from the U.S. Office of Vital Statistics.

Though exact records were not kept until 1968, more than 100 annual lethal accidents were estimated during the 1950s by personnel at Vanderbilt University's Medical School. Between 1968 and 1970, 55 were reported to the National Center for Health Statistics, but between 1980 and 1982 there were just 28.

The National Center also reports that, of 4,293 lethal poisonings in 1983, just 22 were the result of agricultural chemical ingestion.

Dr. Keith C. Barrons notes the statistics are available in a pamphlet entitled "Agriculture and the Enviro-Extremists" which is published by the National Council for Environmental Balance, P.O. Box 7732, Louisville, KY, 40207.

Kikuyugrass: friend or foe?

■ Kikuyugrass is prospering in some warm-season areas but whether or not that's good is a matter of opinion. Some golf superintendents in the Los Angeles area are managing the grass with good results. Riviera Country Club is practically all kikuyugrass. Other superintendents are trying to get rid of it. It can have an extreme thatch layer and may give the golfer a bad lie if not maintained properly. Whether or not it's right for you depends on your climate and management program.

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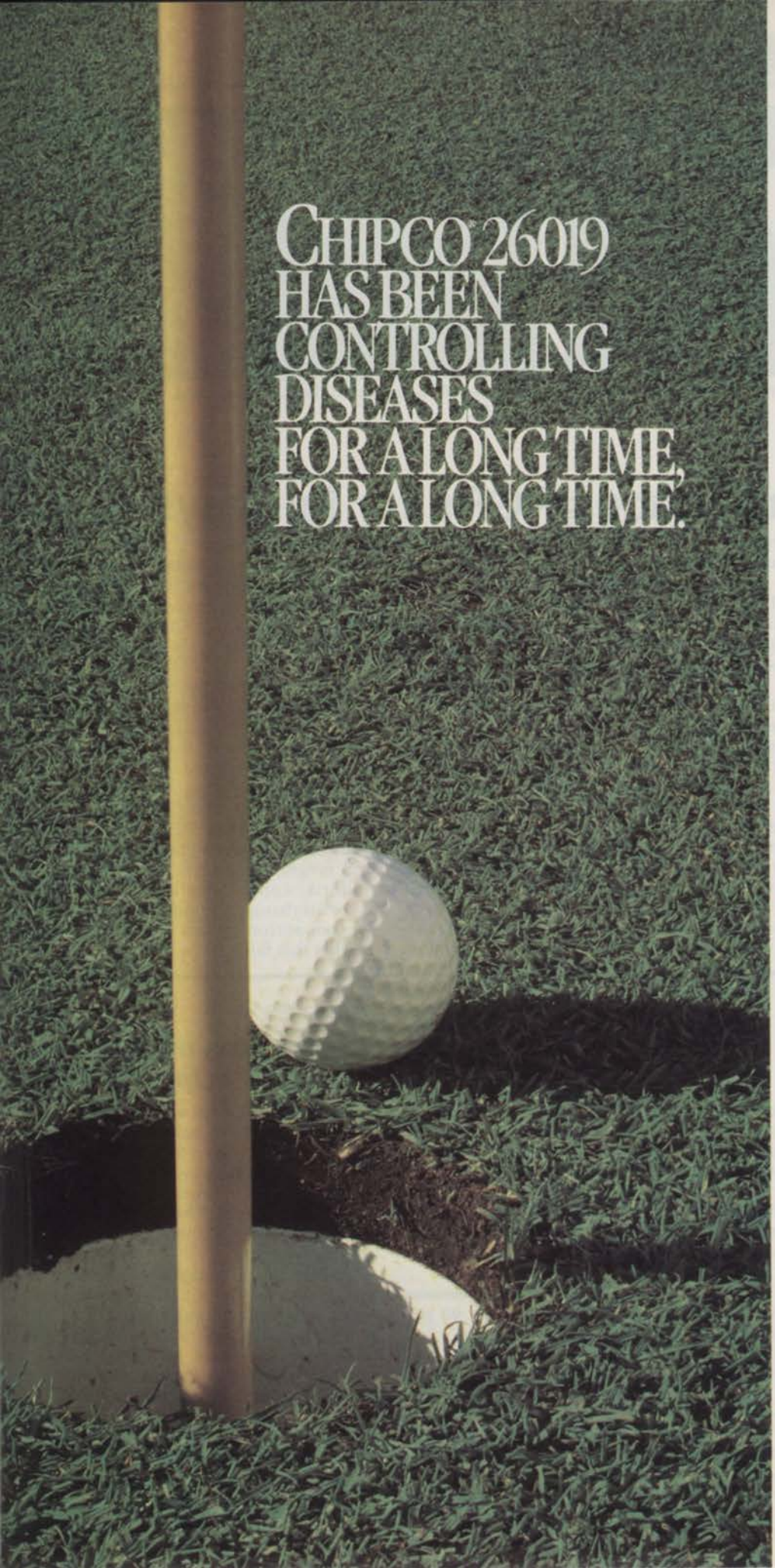

Years of excellent, long-lasting performance have made CHIPCO® 26019 fungicide the leader in its field.

When it's your business to keep turf healthy and handsome, you don't wait for disease to break out. You strike first and play for keeps.

That's why thousands of superintendents base their disease control programs on CHIPCO 26019 fungicide.

It's unsurpassed at controlling the major turf diseases, like Helminthosporium Leaf Spot and Melting Out, Dollar Spot, Brown Patch, Fusarium Blight, Red Thread, Fusarium Patch and Gray and Pink Snow Molds.

And it stays on the job longer, giving up to 28 days of protection for a lower cost per day.

Add a few extras — no phytotoxicity, low toxicity, pesticide compatibility, and no corrosiveness — and you've got a fungicide that's earned its place as the standard of the industry.

Use CHIPCO 26019 this season and you'll stay with it for a long time to come.

Rhône-Poulenc Inc., Agrochemical Division, Monmouth Junction, NJ 08852. RHÔNE POULENC

CHIPCO 26019

Taking care of business.

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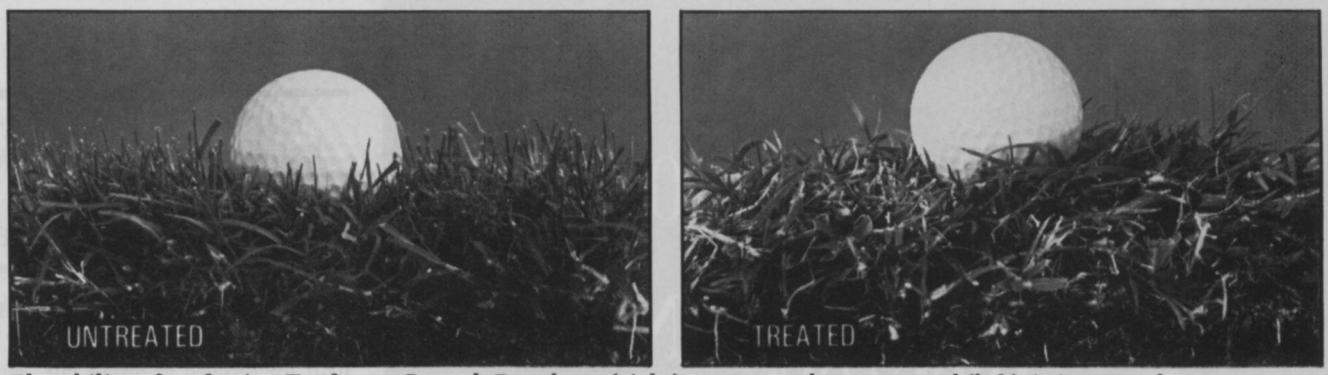
GREEN INDUSTRY NEWS



Playability of turf using Turfgrass Growth Regulator (right), as opposed to untreated (left), is improved.

PRODUCTS

O.M. Scott introduces PGRs for fairways

The first PGRs for fine turf have been released by O.M. Scott & Sons, Marysville, Ohio.

Both are named ProTurf Turf Growth Regulator Plus Fertilizer (30-3-10). One is formulated for loam and clay soils, and one is for use in sandy soils.

"We're doing something that no one's been able to accomplish yet," notes Jim Fetters, marketing manager for professional products. "It isn't the answer to everything, but it's exciting."

The product has been tested in six states as PP-333. Its technical name is paclobutrazol, and it previously received labels for other agricultural uses.

The main benefit of Turf Growth Regulator Plus Fertilizer is that it will improve playability on hybrid bermudagrass fairways. But it also improves turf density, slows growth by about 65 percent for 6 to 8 weeks, enhances greening for up to 12 weeks, reduces scalping potential and reduces clippings by about 75 percent.

"This product is recommended mainly on Tifway bermudagrass, not Tifgreen or Tifdwarf," notes Dr. Milt Kageyama, manager of research and development. "It can also be used to reduce mowing by two-thirds on St. Augustinegrass, although Floratam and Roselawn are not as responsive."

The label says the product must be used on well-maintained, established hybrid bermudagrass fairways and St. Augustinegrass areas that are on regular fertilizer programs, actively growing and have filled in following any winter damage.

Is this product a money-saver?

"We're going to let the individual superintendent figure out how much he's saving," says Dr. Kageyama. "But it looks like there's substantial savings."

According to Fetter, the new PGRs are now available in limited markets. They will be expanded more broadly through the South in the spring of 1987. And they are just the beginning.

Scott's this spring also received EPA label approval for ProTurf Fairway Fertilizer with TGR for poa annua control on bentgrass, bluegrass and ryegrass fairways. According to editorial communications manager Dave Slaybaugh, the growth regulator for cool-season grasses will be on the market this fall.

LANDSCAPE

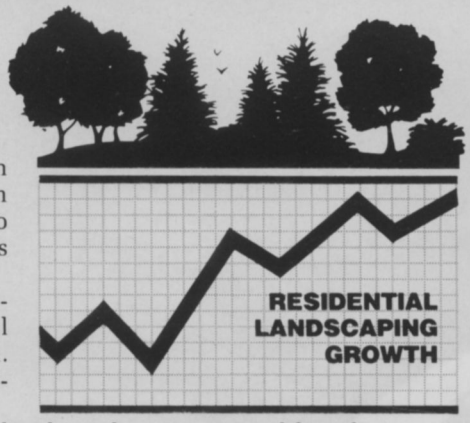
Survey: residential landscaping grows

Residential landscaping has shown stronger growth than landscaping in the commercial sector, according to the National Landscape Association's 11th annual economic survey.

Commercial renovation, residential renovation and new commercial landscaping also have improved. Those responding to the survey expect continued growth.

Predictions for 1986 sales showed that 49 percent see an increase in new residential landscaping; 46 percent say it will remain the same; 5 percent predict a decrease.

For new commercial landscaping, 41 percent forecast an increase, while 15 percent see numbers falling. More than half the respondents, 53 percent, believe no change will occur in residential renovation, although 40 percent see an upswing.



A high 61 percent see no change in commercial renovation. Only 27 percent look forward to an increase.

The survey also determined changes in business. Nationally, business increased 26.1 percent from 1984 to 1985, and is predicted to increase 16.8 percent from 1985 to 1986.

PESTICIDES

Stauffer wins right to register sulphosate

Stauffer Chemical Co. will apparently get the go-ahead to have its registration application for sulfosate processed, following a district court ruling. Sulfosate is Stauffer's glyphosate, a non-selective herbicide registered by Monsanto Chemical Co. and sold as Roundup.

A district court judge denied Monsanto's requests for a preliminary injunction and declaratory relief. The judge concluded, acording to an EPA in-house memo, that Monsanto had not demonstrated that it would be "irreparably harmed...and the interests of Stauffer outweighed the harmes alleged by Monsanto."

As the August WEEDS TREES & TURF went to press, Monsanto had not appealed the decision.

LEGISLATION

U.S. EPA finalizes rules for small quantity generators

The U.S. Environmental Protection Agency has finalized rules according to the Resource Conservation and Recovery Act (RCRA) for small quantity (hazardous waste) generators (SQGs).

According to the Federal Register, SQGs must now, by law, comply with the following rules:

- "determine whether their wastes are hazardous;
- "obtain an EPA identification number;
- "store hazaradous waste on-site for no more than 180 or 270 days in compliance with specially modified storage standards (unless they comply with the full regulations for hazardous waste management facilities);
- "offer their waste only to transporters and facilities with an EPA identification number;
- "comply with applicable Department of Transportation requirements for shipping wastes off-site;
- "use a multi-part 'round-trip' Uniform Hazardous Waste Manifest to accompany waste to its final destination; and
- "maintain copies of manifests for three years."

The Cushman Eagle was warmly received by dealers at Cushman's national dealer conference in June.

TURF VEHICLES

OMC Lincoln has high hopes for new Eagle

OMC Lincoln hopes to be flying high with its Cushman Eagle, a new line of utility vehicles designed for turf and industrial applications.

"This is the largest and most important product introduction that Cushman has had in a decade," says Frank McDonald, Cushman Division director of marketing.

Orders were taken at June's annual dealer conference in June, and deliveries should begin in September.

Cushman will be marketing the Eagle 550 and Eagle 551 to golf course superintendents, parks and recreation managers, and other landscape management personnel.

"We have engineered the Cushman Eagle line from the ground up," says Dan Hedglin, OMC Lincoln sales manager. "These new units fill a need for true multi-purpose vehicles which specific markets told us they were looking for."

Hedglin says Cushman performed an extensive dealer survey beginning in December 1983, asking what buyers wanted in a utility vehicle. The results, he says, were considered in designing the Eagle.

The Cushman Eagle 550 and Eagle 551 are targeted exclusively for turf applications. Features of the 550 include: polyurethane body panels; an 8.5-hp, four-cycle Kawasaki engine; 1,200 lbs. payload; and rack and pinion steering.

"The Cushman Eagle incorporates a lot of innovative features that are not available on any other product on the market today," says Hedglin.

SOD

Warren's Turf relocates sod farm

Warren's Turf Professionals recently moved its Southern California area sod production farm from Perris to Winchester, Calif.

The new farm, located about halfway between Los Angeles and San Diego in rural California, features more than 300 acres of bluegrass, fescue, bermudagrass, St. Augustinegrass, and other turf types.

Warren's held an open house in May to mark the official opening. Guests viewed field demonstrations such as sod harvesting, irrigation, sod netting, and seed bed preparation.

GOLF

MacGregor develops 'Cayman' golf ball

MacGregor Golf Co. has developed a special ball for short-course golf, dubbed the "Cayman" ball because it was designed to be used on Jack Nicklaus's famous short course on Grand Cayman Island (see WT&T, May, 1985).

"The most obvious difference is appearance," says Larry Cadorniga, who designed the ball. "Instead of having dimples, like the regular ball, the Cayman has pimples. This improves stability in windy conditions, which would otherwise cause problems for the light ball."

The ball is made of foamed Surlyn ionomer resin, made only by Du Pont. It limits drives to about 130 yards or so.

"When struck, one side of the ball flattens for an instant," says Cadorniga. "It then regains its form as the ball takes off because of the resiliency of Surlyn."

LANDSCAPING

How much value does nice yard add to home?

Homes in the $122,000 range with trees growing on the lot sold for about $5,700 more than those with lots that had been cleared, says a Texas A&M University study.

The research involved 85 homes around Atlanta, Ga.

According to another study, this one by the American Association of Nurserymen, a nice-looking yard increases property value up to 30%, with an average of about 12%.

One of the studies in the AAN's files was conducted by a U.S. Forest Service employee, who showed photos of identical homes with and without attractive yards to real estate authorities. They claimed selling prices would be 12% higher for the well-landscaped homes.

SHORT CUTS

LET'S GET IT STRAIGHT... Our May "Short Cuts" column contained a few words about the popular Rockhound grooming tool. While the piece was accurate, it may have been misleading. Gary Erholm, president of K.E.M. Enterprises in Tacoma, Wash., assures us that his company still prospers. As we wrote in May, the Melroe Co. (Bobcat owners) purchased both patent and manufacturing rights to the Rockhound. Melroe is the exclusive manufacturer. However, the Rockhound is still available through K.E.M. dealers. It's also available as the Landscape Rake through Bobcat dealers.

QUOTE OF THE MONTH..."Professionalism requires that we look no farther than inside our own hearts and souls." (Lauren Lanphear, Forest City Tree Protection Co., South Euclid, Ohio)

AND THE WINNER IS... Michael Duchemin of Haverhill, Mass. won a tool chest and cabinet from John Deere when his name was drawn at the Deere booth on the last day of the 1986 Landscape Exposition in Valley Forge, Pa. The prize retails at $379.95. Dan Brier and Daniel Gundacker of Deere's Consumer Products Division, Syracuse, N.Y., are still trying to figure out how to send it to him.

WEIRD WEATHER... Unusually warm spring weather this year has changed buying patterns in the green industry. "Spring didn't come, it was just here," says Rudd McGary of All-Green Management Associates, Columbus, Ohio. "We've talked to 20 or 30 landscape and lawn care companies, and their stream of money is coming in differently this year because of the warm February and March weather. There was some delayed buying. As a matter of fact, everything dealing with agriculture is off-pattern—not necessarily bad—just off-pattern."

GOOD READIN'...A handbook on troubleshooting and maintaining landscape irrigation systems is available from The Idea Bank. The book has step-by-step guidelines and how-to illustrations for employees. It includes information on how to repair faulty wiring and how to recognize poor control valves. To receive the manual, send $16 to Richard Lambert, The Idea Bank, 1000 East Apache Blvd., Suite #211, Tempe, AZ, 85281, or call (800) 621-1136 or (602) 829-1233 in Arizona.

SUPER SUPERINTENDENT... Armen Suny, superintendent at Castle Pines, Col., has been named "Superintendent of the Year" by Seed Research of Oregon, Inc. Suny won the title for his work at Cherry Hills, site of the 1985 PGA Championship. He used improved turf-type perennial ryegrasses for completion of tees, fairways, and roughs where bluegrasses are traditionally used. On his fairways he planted a mixture of creeping bentgrasses to show that genetic diversity is just as important in bentgrasses as in other species.

PARKS

New Yorkers want park system upgraded

For the first time ever, police patrol has not been ranked the number one concern of New York City's 59 community boards.

Park maintenance has, according to a report in the *New York Times*.

"It indicates a feeling among people that money spent on parks brings visible results in neighborhood improvement," park commissioner Henry Stern told the *Times*.

The budget for New York's Department of Parks and Recreation has grown from $124 million in 1984 to $165 million in 1986; employees have increased from 3,900 to 4,919. In the last two years, 290 city parks have been improved, and major repairs are scheduled for 200 more this year.

TURF

Spartan gets its certificate number

Spartan hard fescue has received a plant variety protection certificate number, according to Dr. Jerry Pepin, director of research for Pickseed West Inc.

Spartan is a leafy, persistant, turf-type hard fescue. It has cold tolerance and produces attractive, dense, low growing, fine textured turf.

"It's best used as low-management type turf," Pepin tells WEEDS TREES AND TURF. "If you live in the northern states and don't want to water or fertilize, but still want to have a nice lawn, you'd use Spartan."

Besides working well in northern states, Pepin says Spartan will work better in the transition zone than chewing and creeping fine fescues.

Pepin stresses the biggest advantage of Spartan is its heat and drought tolerance.

SPORTS TURF

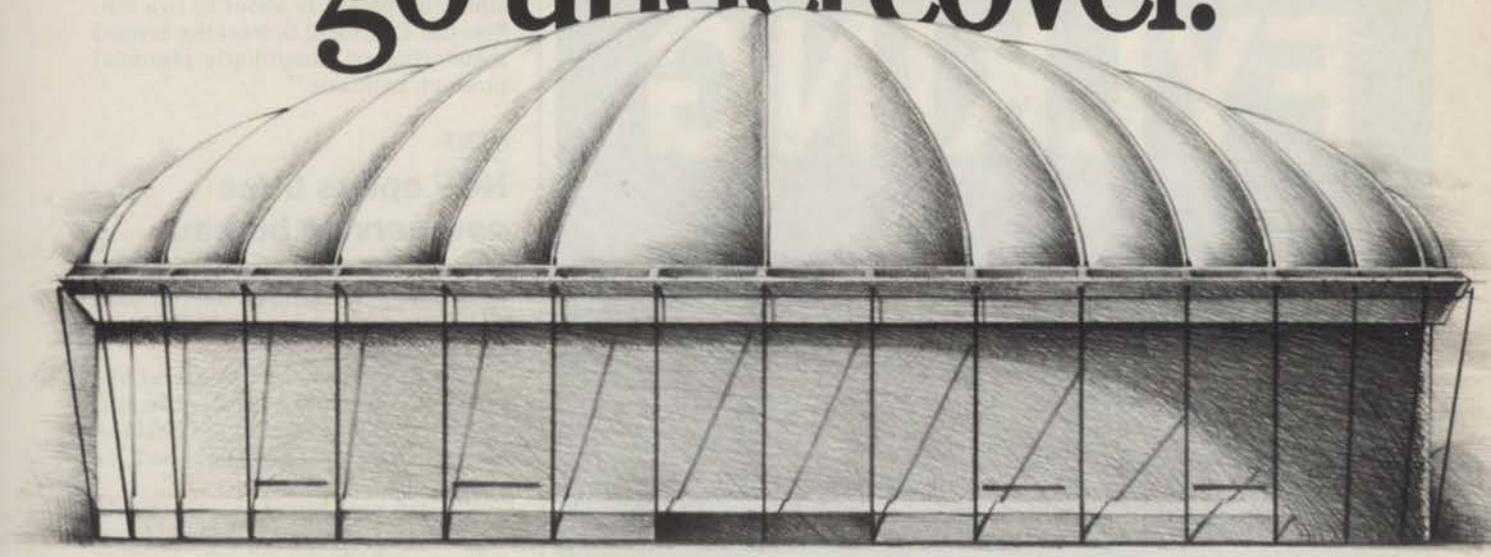
Changes in sport mean management changes

Changes in sport itself have precipitated changes in sports turf management, according to David Frey, field supervisor for Cleveland (Ohio) Stadium.

"In the 1950s, football games were nothing but mudbaths," Frey told a group of reporters who were guests of Ford Tractor at the stadium this spring. "Then Astro Turf came along, and there was more concern about the appearance of sports fields."

Another consideration that has

To find a grass tougher than our new Aspen Kentucky bluegrass, you'd have to go undercover.



When searching for the ultimate turf, the grass to keep an eye on is Aspen, the elite new Kentucky bluegrass from Northrup King.

With qualities such as superior disease resistance, excellent color and texture, winterhardiness, heat tolerance, and wide adaptability, we think Aspen is not only the toughest, but the best bluegrass variety around.

Anything better would be downright unnatural.

You'll find Aspen only in Northrup King's Medalist Turf Mixtures. To uncover more information, contact Northrup King, P.O. Box 959, Minneapolis, Minnesota 55440.

Aspen / NK NORTHRUP KING

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increased the demand for good-looking fields is television. "Now you can see all the other fields," Frey related. "Right up until about 1981, there was no sharing among field managers, but now people welcome you to come in and see their fields."

Other factors which have increased the demand on sports turf managers are:

- Since baseball teams now have more commitments (like television), they are less likely to cancel games because of inclement weather; and
- In football, the hash marks have been moved closer to the center of the field, increasing traffic down the middle.

Frey, immediate past president of the Sports Turf Managers Association, keeps the stadium's baseball infield mowed at 1 to 1½ inches, the outfield at 1¼ inch, and the football field at 4 inches.

FYLKING
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FYLKING

Remember the name because you're going to hear a lot about it. Fylking Kentucky bluegrass lawn is something special. It forms a dense, thick turf, more disease and drought resistant. Greens up earlier, stays greener longer. Fylking can be cut as low as ¾ inch, even ½ inch for home putting greens. Proven over many years of international certified testing. As your seed distributor for Fylking.

Fylking — the World's Fair grass.

FYLKING
KENTUCKY BLUEGRASS

U.S. Plant Patent 2887

Another fine, quality-controlled product of Jacklin Seed Company

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HERBICIDES

Regulatory actions to restrict compounds

Several major herbicide compounds are on their way out, according to a paper released at Bio Expo '86.

The paper, "Herbicide Resistance: Environmental and Economic Issues," was written by Drs. Charles Benbrook, executive director, and Phyllis Moses, staff officer, of the board of agriculture, National Research Council.

The paper says that "compounds in major classes of products including the triazines, acetamides, phenoxys, and phenylurea are falling under dark regulatory skies. Over the next five years, it is likely that the use of a half dozen or more major products in the United States—indeed in several other countries—will be severely restricted, if not eliminated altogether."

The paper says that eventually regulatory actions will limit the range of uses of many of the older compounds. It also noted that more than 130 active ingredients for weed control are in various stages of development with at least 50 expected to gain registration in the next decade.

Specifically, the paper cited that glyphosate's price will probably fall since the patent is about to run out. Stauffer Chemical is working toward registering an "essentially identical product, sulfosate."

GOLF

NGF opens three new service bureaus

In an effort to better serve the development of golf facilities, the National Golf Foundation has opened three regional offices.

The East, West, and Midwest bureaus will provide expertise in golf course development, says Sheridan Much, NGF vice president of operations.

"These new bureaus will enable us to better customize our services to the area," Much says. "Each of our bureau directors is very familiar with the character of the areas he will cover."

NGF West, located in Scottsdale, Ariz., will be managed by Ted Zahn. Zahn is also the Foundation's director of education. It will serve 13 states.

Bob Slauson, NGF's director of golf facility consulting services will head NGF East in Marietta, Ga., serving 22 states.

Much will manage NGF Midwest in Lawrence, Kans.

EQUIPMENT

JI Case marks 175,000 loader/backhoe sales

JI Case has sold its 175,000th loader/backhoe manufactured at its plant in Burlington, Iowa. The lucky purchaser is Robert Gregory Jr. (below) of Green Thumb Landscaping Co., Annapolis, Md.

A ribbon-cutting ceremony commemorated the manufacturing of the unit on Oct. 31, 1985. Case pioneered the first loader/backhoe available from a single source in 1957.

Also pictured here is local Case distributor Jay Weamer, sales manager for Suit & Wells Equipment Co., Upper Marlboro, Md.

PEOPLE

Dr. Turgeon named Penn State University agronomy head

Dr. Al Turgeon is named professor and head of **Penn State University's** agronomy department. He is former vice president of research and technical services for Tru-Green Corporation. He continues in a consulting capacity with Tru Green. Dr. Turgeon is also former resident director of research at the Texas A&M Research and Extension Center in Dallas.

Al Turgeon

Henry Nadler

Doug Wilbrandt, owner of CBD Landscaping, Crystal Lake, Ill., has been named "National Young Entrepreneur of 1986" by the United States Small Business Administration. He was originally nominated by the Center for Industrial & Business Employee Training of McHenry County College and also won the title at the state level.

James A. Fink is vice-president of operations at **Lesco Inc.** in Rocky River, Ohio.

Neal Howell

Gene Selawski

PBI-Gordon Corporation names **Henry Nadler** director of sales and marketing for its pesticides. **Neal Howell** joins the company as director of technical sales services—soil amendments. **Gene Selawski** is regional sales manager for the company's Eastern Division.

Claus A. Sass is promoted to grower services manager for the **Jacklin Seed Company's** Oregon opera-

FREE . . .

LOFTS TURF GUIDE

Lofts' *Guide to Seed and Sod in the U.S. and Canada* is available free of charge on request. The *Guide* is a complete reference for turf grasses, with comprehensive information on use, adaptation, planting dates and rates. This latest edition also includes a section on ornamental grasses and their application.

For your free copy contact Marie Pompei, Research Department, Lofts Inc., Box 146, Bound Brook, NJ 08805, (201) 560-1590.

LOFTS Lofts Inc.

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Everybody's talking about Toro's EL-6+

"I've been using Toro products for the past 9 years and began using the Toro EL-6+ because homeowners like it. They like the cost, they like the simplicity of the programming. Once I showed them, that was it. I never had any call-backs since I started using the EL-6+." *Ken Detwiler, Contractor San Bernardino, CA*

Toro's new EL-6+ controller has everybody talking.

If you'd like to hear about it first-hand, contact your local Toro dealer, or Toro directly at 5825 Jasmine Street, P.O. Box 489, Riverside, California 92504. (714) 688-9221.

TORO

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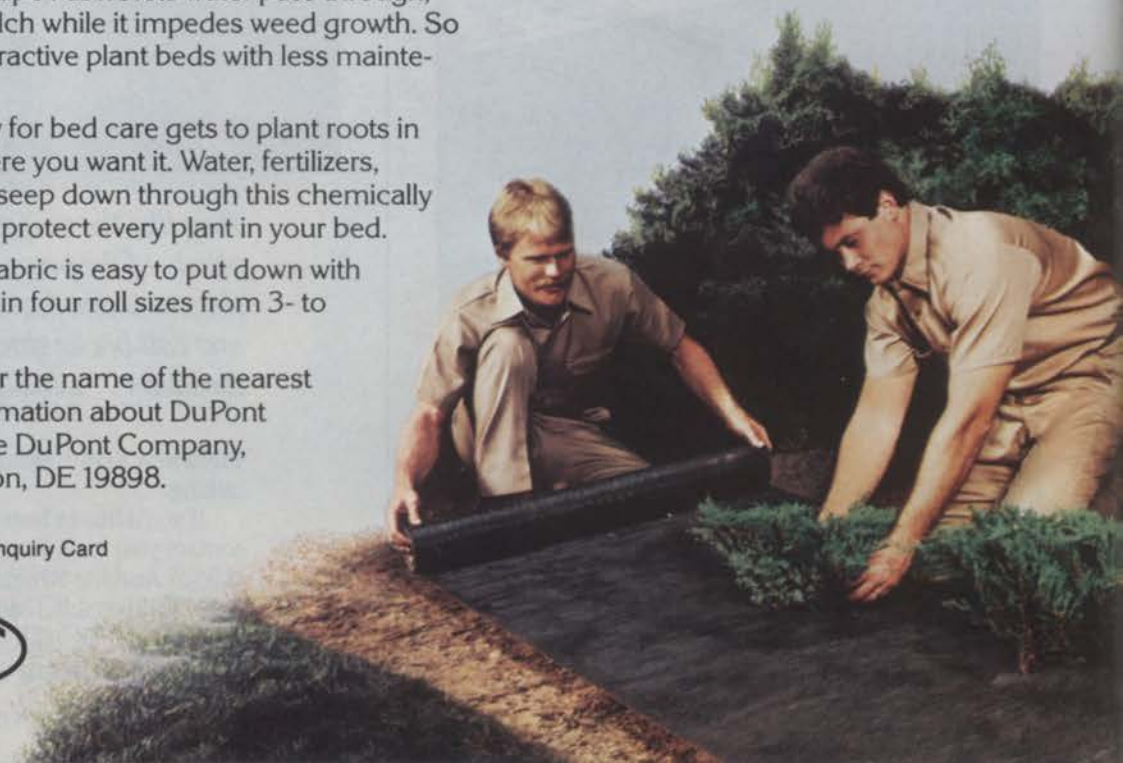
New Du Pont Landscape Fabric. It lets water through to give you healthier beds with less work.

New DuPont Landscape Fabric lets water pass through, reduces wash-away of mulch while it impedes weed growth. So you get healthier, more attractive plant beds with less maintenance work and cost.

Everything you apply for bed care gets to plant roots in the amount you want, where you want it. Water, fertilizers, herbicides and pesticides seep down through this chemically inert fabric to nourish and protect every plant in your bed.

DuPont Landscape fabric is easy to put down with scissors or knife. It comes in four roll sizes from 3- to 12-feet wide.

Call 800-441-7515 for the name of the nearest distributor and more information about DuPont Landscape Fabric. Or write DuPont Company, Room G40955, Wilmington, DE 19898.



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DU PONT

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tions. He's been with the company for six years.

Brian Houston is elected 17th president of the **Canadian Golf Superintendents Association.** A five-year member of the CGSA Board of Directors, he is superintendent at Vancouver's prestigious Shaughnessy Golf Club.

Russ Gillum joins the **Ball Seed**

Claus Sass

Russ Gillum

sales staff, covering the San Francisco Bay area. He started with the company in 1965.

Charles F. Adams is appointed business manager, specialty products in the Vegetation and Pest Control Ventures Department of **American Cyanamid's Agricultural Division.** He's held a number of technical sales and marketing positions since joining the company in 1974.

Bob Bryant is appointed golf manager for **Rain Bird Sales Inc. Denyse Arles** is appointed inside sales representative for the company's Turf Division while **Tom Shannon** is Southeast

Bob Bryant

Denyse Arles

district manager for the Turf Division.

William F. Kirk, general director of the Du Pont Company's Agricultural Products Department, is named distinguished alumnus by the **University of Illinois College of Agriculture Alumni Association.** He is a 1964 graduate.

Wade E. Terry is director of sales for **The Toro Company's Irrigation Division** in Riverside, Calif. A Toro employee since 1970, he will manage company sales programs. **Ken Kline** is named technical/sales training manager for Toro's Irrigation Division. He is a former irrigation installation professor at Cal Poly—San Luis Obispo.

Wade Terry

Ken Kline

Warren's Turf appoints **Steve Teeple** national sales manager. He has experience in the materials handling industry.

Steve Teeple

Ken Killian is elected president of the **American Society of Golf Course Architects.** He began his architectural career in 1956 and started his own firm in 1983.

Tim Peter is promoted to director

SANDANCER
UTILITY VEHICLE

- Model 4: 3 wheels
- 1500 lb. payload
- 5 foot tilt bed
- Strongest utility vehicle built
- 7 major automotive components

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Everybody's talking about Toro's EL-6+

"I've been using the EL-6+ controller for over a year now and my homeowners are really pleased with the ease of operation. Once you show it to them, you very seldom have to show it to them again." *Mike Crawford, Contractor Jacksonville, FL*

Toro's new EL-6+ controller has everybody talking.

If you'd like to hear about it first-hand, contact your local Toro dealer, or Toro directly at 5825 Jasmine Street, P.O. Box 489, Riverside, California 92504. (714) 688-9221.

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MAVRIK.® ALL THE AMMUNITION YOU NEED.

Now. Take your best shot against insects and mites.

No matter what you're taking care of, MAVRIK AQUAFLOW® Insecticide will take care of your insects and mites.

There has never been a single product that handles so many pests, while being so convenient to use and so safe to plants. MAVRIK is a non-restricted material, and it has been tested on more than a hundred ornamental species without a report of any phytotoxicity.

MAVRIK is a water-based flowable, so it's convenient to mix, and there is no odor and very little visible residue. The dilution range is flexible—use more for mites, less for most other pests.

Use MAVRIK on trees, shrubs, lawns. Use it on aphids, thrips, whiteflies, worms, blackvine weevils, two-spotted and European red mites. Once applied, MAVRIK won't hurt bees or most other beneficials.

You won't find the convenience and broad spectrum coverage of MAVRIK in any other product. And since MAVRIK is available at your local distributor, all you have to do is ask for it.

Zoecon Corporation, a Sandoz Company
Crop Protection Division
Palo Alto, California 94304

Use pesticides effectively. Read and follow label directions carefully.

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of engineering for **Ransomes Inc.** He has been an engineer with the company for seven years.

Ford Tractor appoints **Joseph W. McAvoy** quality manager of Ford's Tractor Operations (FTO) as a result of the consolidation of FTO's Product

Ken Killian

Tim Peter

Quality and Quality Control offices. He's been with Ford since 1959.

Mike Baron is appointed residential market manager and **David G. Wheeler** is named industrial market manager of the Turf Division of **Rain Bird Sales Inc.**

Simplicity Manufacturing promotes **Bill McKee** to area sales manager for Western Pennsylvania and **Pat Hanlon** to district sales manager for Northern Illinois.

Morton McDonald Jr. is appointed director of sales and business development in the Crop Protection Chemicals Department of **American Cyanamid's Agricultural Division.**

Lynda Minchin is regional sales manager for 10 Midwestern states and Los Angeles County for **Hunter Industries.** She has 13 years experience in landscape contracting.

Kohler Co. appoints **George R. Tiedens** group vice president—power systems, and **James M. Roenitz** vice president—plumbing and specialty products North America.

Gary Curl is named business manager of **Pennwalt Corporation's Agrichemicals Division.** He is involved in developing the company's endothall-based products.

Joseph McAvoy

Mike Baron

R. William Marberger is elected president of **The Pennsylvania Turfgrass Council.** He is a turf specialist with the Mid-Atlantic Equipment Corporation in Collegeville, Pa.

David Wheeler

Bill McKee

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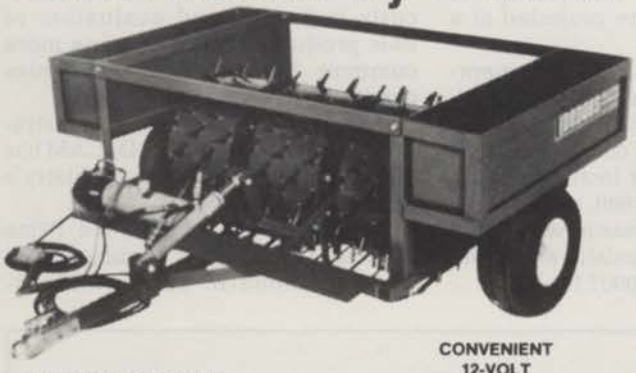

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EASY HOOK-UP
PUSH BUTTON CONTROL

This versatile unit features a 1-7/8"-200 lb. torque load hitch that can be pulled by a wide variety of tractors or utility vehicles. The remote control hydraulics not only allows easy hook-up but also makes operating a pleasure. Stay in your seat—just push the button to raise or lower the drum.

The easy to load weight boxes provide convenience for adding weight for operating in all kinds of soil.

The trailer aerator can easily be converted to an optional flat bed trailer giving you a versatile hydraulic dump bed.

We have units that fit most utility carts, garden tractors, full size tractors and units that can be pulled by most utility type vehicles.

So if you're responsible for strong, healthy grass and concerned with saving time and money, investigate Dedoes quality aerators.

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Everybody's talking about Toro's EL-6+

"You really do get more features for less cost with the EL-6+ Controller. I highly recommend it." *Charles Ellis, Contractor Oklahoma City, OK*

Toro's new EL-6+ controller has everybody talking.

If you'd like to hear about it first-hand, contact your local Toro dealer, or Toro directly at 5825 Jasmine Street, P.O. Box 489, Riverside, California 92504. (714) 688-9221.

TORO

Circle No. 140 on Reader Inquiry Card

DOWN BUT HEADED UP

The outlook for the equipment industry is down slightly but projected figures to the end of the decade are positive. The commercial turf equipment market should experience steady growth through decade's end.

by the WT&T staff

The outlook for the green industry equipment market in 1987 is still positive, but the figures may be down from impressive 1985 and 1986 numbers.

It finally appears the steamrolling American economy is slowing to a more realistic pace after four years of substantial growth, and that slower pace appears to be having an effect on the turf equipment market.

Members of the Outdoor Power Equipment Industry (OPEI) anticipate a decrease in product shipments in 1987, according to figures prepared for OPEI by the Bolens Corp.

However, the decrease is not expected to be substantial.

Total shipments for 1987 (walk-behind mowers and tillers, and riding units) are expected to fall just 1% from 1986 figures.

Figures from 1986 are down slightly from 1985. When final figures for model year 1986 are available, rear engine riding mower shipments are expected to decrease 3%; front engine lawn tractors, down 1%; garden tractors, down 10%; walk-behind rotary mowers, down 3%; walk-behind tillers, down 6%; walk-behind snowthrowers, down 16%.

A solid long-term

Although 1986 and 1987 numbers are expected to lag behind those posted in 1985, projected numbers for 1988, 1989, and 1990 are up substantially, according to OPEI members.

Shipments of walk-behind mowers and tillers are forecast at more than 5.5 million in 1988, up a projected 4.5% from 1987's estimated figures. Projected figures for 1989 are up 4% while 1990 figures are projected at a 3.4% increase.

OPEI commercial turf care members are optimistic about 1987, forecasting a 5% increase in shipments.

In the long view, commercial turf care members predict increases of 4% and 2% for 1988 and 1989, respectively.

Is there a single reason why OPEI members are so optimistic about the years 1987 through 1990? Probably not. However, more efficient design and manufacturing processes may lead to greater productivity, more profits, and a rosier outlook.

A new solution

It's called the CAD/CAM system. It's revolutionizing the equipment industry, perhaps more than any new product itself.

CAD/CAM stands for "Computer Aided Design/Computer Aided Manufacturing."

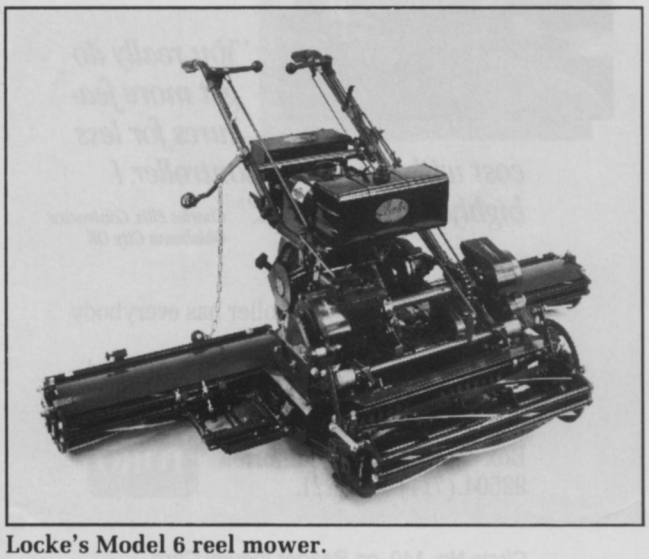
While smaller manufacturers still fumble with eraser-marked drawings, larger companies are taking it easy. Push one button on the CAD/CAM system and you can re-design an entire product, or just one part of a product.

"We've enjoyed continued growth and a certain momentum because of CAD/CAM design for state-of-the-art engines," says Ruth Ann Stuckey, marketing director for Grasshopper.

Denny Brown, manager of marketing services for Toro, says the CAD/CAM system has reduced costs in testing and evaluation of new products. "It's becoming more common, but not many companies use it yet," Brown says.

Simplicity's director of administration Chris Covert says CAD/CAM has made an impact on the industry's manufacturing aspect.

Howard Price of Howard Price Turf Equipment says, besides CAD/CAM, automatic computer-con-



Locke's Model 6 reel mower.

J I Case's Model 480E loader/backhoe.

Toro's EL-6+ gives you accurate, simple control, time after time.

If you like the accuracy and reliability of a solid state controller, but prefer the easy programming of electromechanical models, why not choose the best of both worlds? The EL-6+ from Toro.

Thanks to its hybrid design, it is exceptionally accurate, reliable and easy to program. All it takes to set up a six or seven day repeatable watering schedule are three easy steps.

And there's no need for backup batteries to maintain the program if there's a power outage.

As versatile as they come.

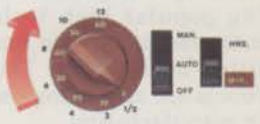
The EL-6+ handles all kinds of watering jobs. From simple to more complex. Thanks to its flexible program, you can water lawn areas only, or lawn and shrubs during the same cycle.

And, it controls up to six stations with individual timing from three to 60 minutes. Two of those stations provide up to 12 hours for drip irrigation. Plus, each station has a control switch for automatic or manual operation.

There's even a System On/Off Switch which lets you stop watering altogether—without changing or erasing the program.

Rotate the hour wheel to current time. Press pin to set watering start time(s) by hour. Up to 11 start times available.

Once start times have been selected, rotate day wheel to present day. Select watering days. Press day pin(s) all the way in for lawn and shrub watering. Press button(s) just halfway for lawns only. Unpressed day pin means no watering.



Set stations 1-6 for the desired watering times. All stations may be set to water from 3 to 60 minutes. Stations 5 and 6 may be programmed to water for ½ hour up to 12 hours, to meet drip requirements.

More features for the money.

Here's the best news yet. When you compare the benefits of the EL-6+ to those of comparably-priced controllers available today, you'll find that it provides a lot more features for the money. Which is why a lot more contractors are choosing the EL-6+ time after time.

For more information, contact The Toro Company, Irrigation Division, P.O. Box 489, Riverside, CA 92504. (714) 688-9221.

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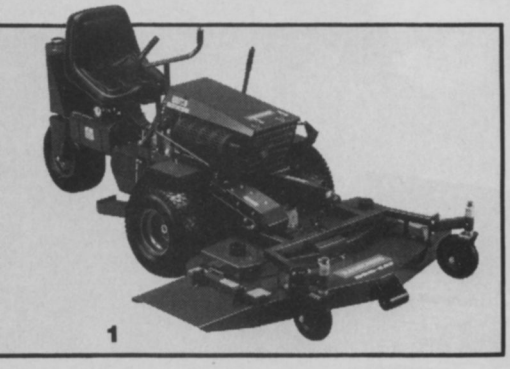
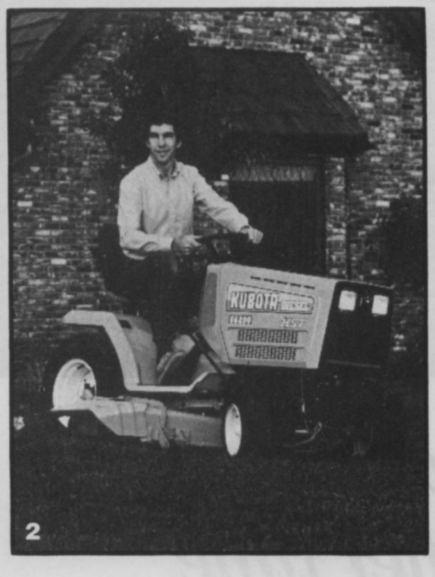
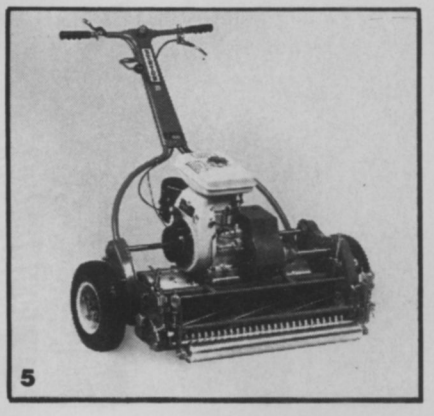






1) Ransomes' T16K, 54-inch rider with floating cutter deck.

2) Kubota's G6200, 16-hp lawn and garden tractor.

3) Honda's HR173 lawn mower.

4) The new Lesco 300 Greensmower.

5) Bunton's 26-inch walk-behind greensmower.

trolled punch presses are also becoming popular high tech "musts" in manufacturing. Nic Smokey, advertising manager for Tecumseh, says robots are also being used frequently in manufacturing.

And greater technology is engendering growth in certain markets. The commercial turf care industry market has been growing steadily since 1983, and OPEI commercial turf care members predict continued growth to the end of the decade.

Lawn care organizations made up about 48 percent of the commercial market in 1985, with a predicted rise to 55 percent by 1987.

Similarly, shipments of both walk-behind and riding mowers are expected to be up in 1987 and beyond.

Shipments of walk-behind mowers in 1987 are forecast at 5% over 1986 levels. An increase of 10% is predicted for 1987 in the riding mower category.

Heavy equipment sales down

The outlook for the construction equipment market is not so bright, according to figures prepared by J I Case.

North American sales of small and medium-sized construction equipment are projected to fall 18% in 1987 when predicted reduced housing starts and commercial construction takes place.

Sales of construction equipment were rated at 81,500 units in 1986, a decrease of 3.5% over 1985's 84,595 figure, according to Case.

The figures from 1985 represent about 75% of the industry's last peak in 1979 (113,823). Sales reached a low of 48,194 in 1982.

...projected numbers for 1988, 1989, and 1990 are up substantially...

High-tech touches all

It's difficult to link the ups and downs of the markets with recent product changes. But there's no doubt that high tech has affected almost all turf-care products.

High tech has caused "better utilization of labor," says Gordon Bannerman, corporate secretary of G. Bannerman Ltd. Such advancements provide time to get other things done.

In the sprayer category, Bannerman says the greatest advancement is the development of the microchip. Computerized spraying minimizes chemical waste and doesn't pollute the environment.

Even the smaller equipment manufacturers are utilizing high tech improvements. Larry Hoyord, manager of sales administration for High Ranger Inc., which makes bucket trucks used by arborists, says fiberoptic controls makes replacing a wire or hydraulic oil possible with a beam of light transmitted through a hollow cable.

Frank McNamara, manager of market planning for Kohler Co, says magnum fuel tanks, made out of a plastic material, are a new trend in equipment.

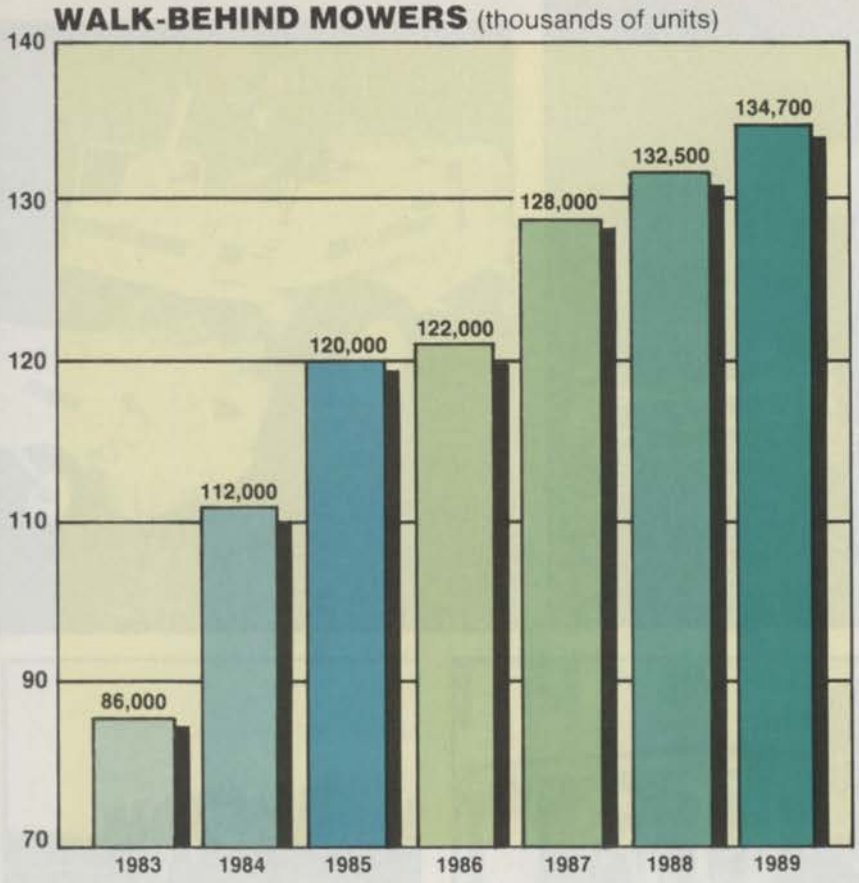
Pat Curtiss, manager of product planning and research for Honda, says his company has been an innovator in marketing lawn mowers with plastic decks which won't rust, and tractors with clutchless transmissions. This year Honda will introduce the first four-wheel drive, four-wheel steering garden utility tractor which uses gasoline instead of diesel.

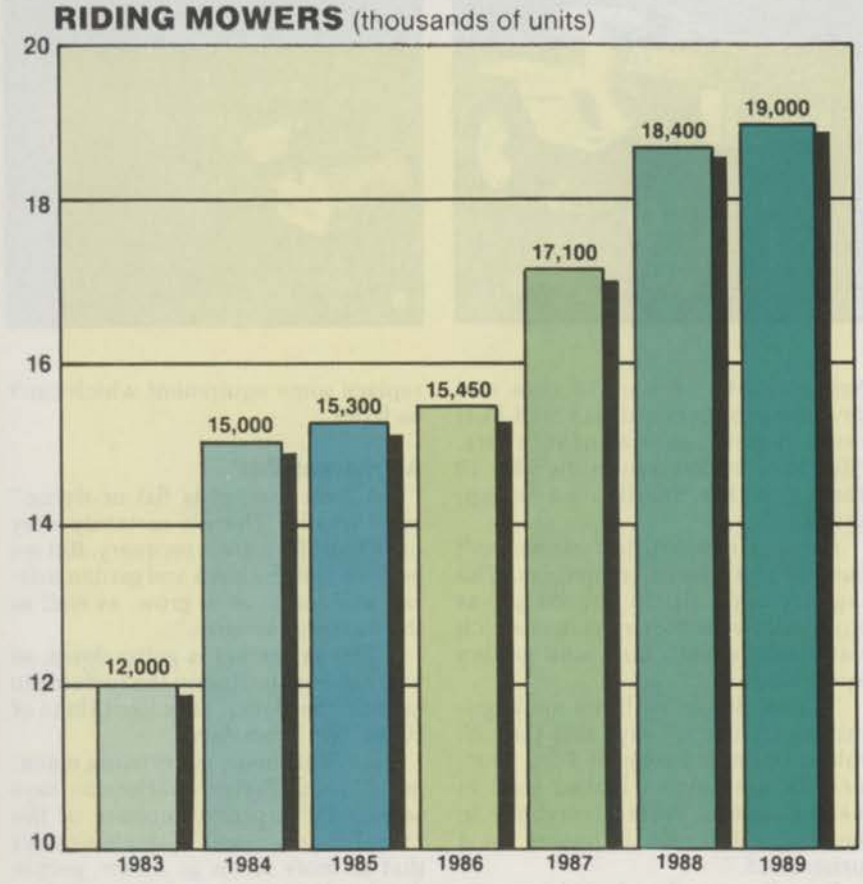
Hydraulic power

Hydraulic power is becoming more popular, according to Pat Scholl, communications manager for Alamo.

But Stan Kinkead, sales manager for National Mower, says hydraulics cost more and lose efficiency by using more horsepower.

Extended Commercial Products Forecast





Source: statistics presented by Bolens Corporation for Outdoor Power Equipment Institute

Where mowers and tractors are concerned, operator comfort and equipment versatility are the biggest reasons for improvements, says Jim Taylor, president of Heckendorn.

Lee Markgraf, operations manager for Kawasaki, agrees. "The trend in new products are features to help people operate the machines, such as low-oil shut off," he says.

Besides operator comfort, safety has been a reason for some equipment changes.

"I would say the biggest improvements came when federal legislation for consumer product safety went into effect three years ago," says Jim Jenkins, sales manager for Snapper. An example is mowers in which the blades stop turning the minute the handle is released.

Flail mowers have seen better sales...because of safety features.

Flail mowers have seen better sales recently because of safety features. Flails will throw rocks down to the ground instead of out, explains Ed Toolis, president of Vrisimo. "There's a great demand for our particular type of equipment. We're adapting flails where rotaries were once popular," he says.

Security factors

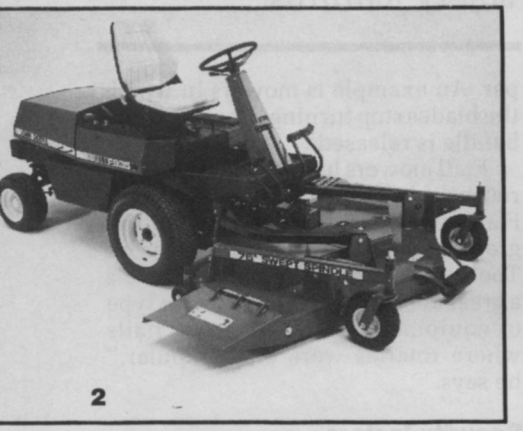
Along with safety factors, some companies are integrating security features into new products. Joe Nelson, director of marketing services for Sensation Power Equipment, says this is the second season the company has marketed the electronic code access monitor (ECAM), a touch-tone phone key pad used instead of an ignition key.

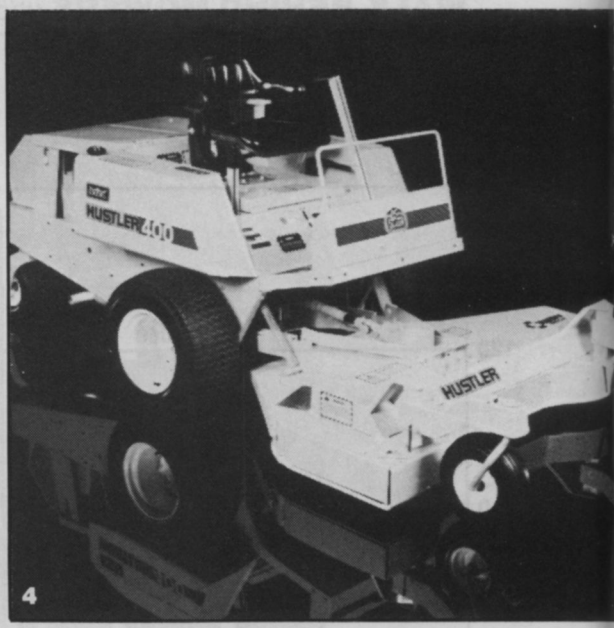
Electronic controls and electronic monitors which check engine, ground, and reel speed are becoming even more popular equipment features, according to Jim Byrnes of Jacobsen. But some companies can't compete.

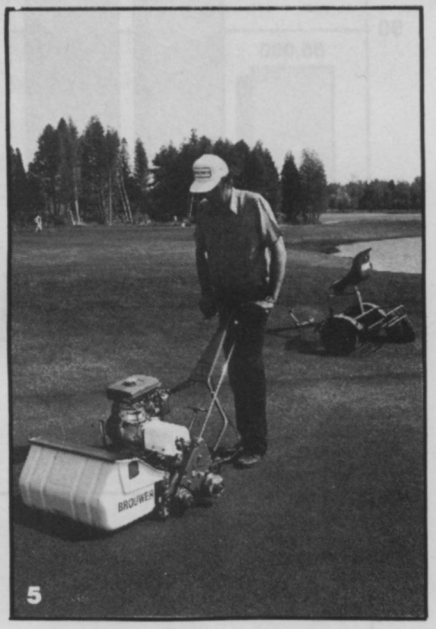
"It isn't feasible for a lot of companies to keep up," says Byrnes. "They have limited research and development facilities. As a committed larger organization, we'll have a definite advantage."

Besides domestic competition, equipment companies face foreign competition. Bob Bergen, president of Bolens Corp., sees some advantage to the foreign competition.

"There's been a moderate upgrade







1) Jacobsen's HF-5, five-gang hydraulic fairway mower.

2) Deere's Model F935 with 76-inch swept spindle mower implement.

3) Ford Tractor's LGT 18H lawn and garden tractor.

4) Excel's Hustler 400, a 72-inch, 34-hp tractor.

5) Brouwer's Greensmower with 3.5-hp gas engine.

of engines in the past couple of years which has been sparked by more offshore products coming onto the market," Bergen says.

Pat Hammell, marketing coordinator for John Deere, agrees that foreign competition is not all bad. "American manufacturers have utilized ideas they've picked up from the Japanese method of manufacturing such as the modular design," says Hammell.

John Small of Yanmar Tractor says the Japanese technology and Asian ability to manufacture and develop products quickly will hurt some American manufacturers. "But they've been on notice for 10 years," warns Small, who is Japanese.

Foreign competition alone isn't hurting equipment companies. The sagging agriculture industry has brought down some companies which manufacture both farm and garden equipment.

"It's all tied in with the total agriculture industry," says Bill Carroll, public affairs manager of Ford Tractor. "Things haven't looked good in the last several years. Everybody in the tractor business is hoping for a turnaround."

Carroll says sales should improve by 1988, since people will be forced to replace some equipment which can't be fixed.

Ag market 'flat'

"The farm market is flat or dying," says Small. "There's certainly very little hope for a great recovery. But we believe that the lawn and garden market will continue to grow, as well as the nursery industry."

"The ag market is going down, so we're concentrating on the turf side to take up the slack," says Kent Hahn of Hahn Agri Producers.

Jack Steinhour, advertising manager at Woods Division of Hesston, says sales will improve because of the "rural renaissance." Steinhour says that as more farms go under, people disgruntled with urban life will buy up an acre or two of land and use need

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Circle No. 133 on Reader Inquiry Card

more lawn equipment.

While the farm economy may be down, the general economy is stable which makes sales good overall. "The consumer is willing to spend money on big ticket items," says Simplicity's Covert.

Low interest rates particularly affect the housing market. "Every day there's more building permits given out, every day there's more lawns to be mowed," says Sam Smith, manager of lawn and garden equipment operations for Deutz-Allis Corp.

Steve Yolitz, manager of market planning for J I Case, says along with low interest rates, low oil prices benefit the industry. "Low oil prices, in general, are a plus because it impacts construction," says Yolitz. "A drop in oil prices also reduces operating costs."

The economy has an impact on the equipment industry from the outside, but changes within the landscape management industry also have a strong impact.

The best opportunity

Toro's Brown calls the commercial landscape contractor "the fastest growing opportunity today for equipment."

Gary Erholm, president of Kem Enterprises and developer of the Rockhound grooming machine, is enjoying solid sales to landscape contractors throughout the country.

"We see more and more landscape contractors entering the scene with more than a wheel barrow and shovel background. I'm hearing a lot of favorable reports from contractors who have so much work they can't keep up," says Erholm, who also sells to golf course contractors and municipalities.

"We're seeing growth in the outdoor power equipment industry," says David Welfelt, marketing manager for Excel. "A lot of it is due to the professional landscape maintenance contractor. There's still a lot of professionalizing going on within the landscape maintenance industry. That goes hand-in-hand with equipment."

Such growth has heated up competition between companies in all types of equipment.

"This is a very competitive market," says Teresa Lowry, advertising manager of Gravely. "When we entered it four years ago, there were maybe five manufacturers making commercial intermediate walk-behind mowers. This year at the Landscape Expo, there were something like 40. We do see the market growing."

Howard Price says the competition for manufacturing 72-inch mowers is especially intense since John Deere, Jacobsen, Toro, Excel, Ransomes, and Price all market similar models. **WT&T**

Bob Bergen, Bolens president, sees good years in 1986 and 1987.

Lesco's Jeff Mack sees equipment growth for his company.

Jim Gourley of Lawn Masters "can't build plug aerators fast enough."

WT&T asks: 'How does the future look?'

Dale Evenson, *president, HMC/The Green Machine: "In the two-cycle part of the industry, there will be some pretty good price increases coming up this summer and next year if the dollar remains the same. Most two-cycle equipment is imported."*

Jim Gourley, *president, Lawn Masters: "Tremendous. We can't build our plug aerators fast enough."*

Myrtle Feldmann, *Feldmann Engineering: "Very optimistic. We're always developing new products."*

Earl Crane, *Earl Crane, Inc.: "It's like I've said for 60 some years in this business...It's out there if you want to go get it."*

Jim Taylor, *president, Heckendorn: "It doesn't look like it's going to be gangbusters, but there'll be steady growth."*

Bob Martin, *president, Exmark: "Sales are ahead of last year and mechandise is moving through earlier. We see the market continuing to grow for several reasons: commercial mowers are growing like commercial chemical application people, and the cost of a good quality homeowner mower is increasing."*

Bob Walker, *president, Walker Mfg.: "We're a niche product in turf care. We'll offer a larger horsepower machine in '87 with more features for the commercial market."*

Bob Bergen, *president, Bolens: "The outlook we see from our company's standpoint is very very positive for this year. There's good indication it will carry through to next year."*

John Kurtze, *vice president sales, Al-Ko Kober: "I see nothing but low inventories and an interest from all levels to increase inventories. I'm very positive about it."*

Mike Schaefer, *vice president, F.D. Kees: "The lawn equipment market is a growing market. The intermediate riding mower market is pretty tight. But I think it'll be like the trimmer market and thin out in the future."*

Jeff Mack, *product manager, Lesco: "We believe that today's customer is becoming cost conscious. They will not sacrifice quality to obtain this objective. This fits Lesco in that we market directly to the end user, thereby allowing us to provide excellent quality at a very competitive price. This strategy has positioned us for tremendous growth within the equipment industry."*

Kevin McGrath, *Locke Mfg.: "It looks positive. The people we're selling to now are much more educated and knowledgeable.*

Dal Neely, *manager national commercial sales, Wheel Horse: "The power equipment industry looks pretty good for a number of reasons. The economy has stabilized, interest rates are down, and the pricing structure is better."*

Steve Yolitz, *manager market planning, J I Case: "'85 was the best*

continued on page 28

The PREMIER

Rotary Mower Engines by Tecumseh

Premier is the styling pacesetter for the entire Tecumseh TVS series of rotary mower engines. New operator convenience features and engine protection features include • over-sized, pleated paper air cleaner element • a one and one-half quart fuel tank • new larger oil fill and fuel fill openings with large, easy-to-grip caps. • New soft-pull recoil starter makes starting effortless. • The Premier continues to feature the innovative pressure pump lubrication system, • mechanical governor and • compression release for which the TVS series has been acclaimed. The Premier is available in four displacement sizes, with electric starting and with 8½:1 and 2:1 PTO's.

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Circle No. 137 on Reader Inquiry Card

MOWING FOR DOLLARS

The right mower for the right job can mean savings for your mowing operation.

by William C. Kinzer

Pull-behind reel gang mowers, like the Jacobsen 5/7 Ram-Lift Ranger with seven gangs, are the most economical mowers for large turf areas.

A great deal of money can be saved on mowing costs by simply choosing the right equipment for the job and using that equipment in the most efficient and economical manner.

To achieve the most cost effective mowing, there are several factors to consider.

The initial cost of equipment appears to be the most obvious factor. But in long-term mowing budgets, it may be the least important due to labor costs, maintenance costs, downtime costs, and fuel costs over a given time frame.

Each machine must be evaluated in its application for what it can do for you.

Types of mowers

Each of the basic mower types (reel, flail, rotary, sickle) has its advantages and limitations. A purchaser must know the type of turf he needs to cut, how often it needs cutting, and what each of these mower types can do for him.

Reel mowers give the finest quality of cut due to their shearing action. They also have the longest life.

Rotaries have the easiest maintenance, but because they are impact-type mowers, they produce a less formal finish to the turf and require a higher horsepower source.

The flails have safer operating characteristics, and some give a quality cut to semi-formal as well as informal turf. Flails are also impact-type mowers and require a high horsepower source.

Sickle mowers are effective for cutting tall rough grass such as along roadsides but they have limited applications and high maintenance requirements.

Horsepower requirements

All mower types should be teamed up with properly sized horsepower

William C. Kinzer is product manager for the Jacobsen Division of Textron Inc.

THE EQUIPMENT REPORT

continued from page 26

year since '79 in terms of the industry. We look to '86 to be possibly matching '85 levels."

Dave Taylor, *national marketing rep, Dedoes: "Fantastic! The aeration market has finally caught on...particularly in athletics and schools."*

Patricia Carroll, *advertising/public relations, Kubota: "Our product line is appropriate for the commercial turf market as well as the compact tractor market. Our success comes from both markets."*

Joe Nelson, *director marketing services, Sensation: "It's kind of cloudy, really. Generally, we feel it's stabilized, but it's a slow growth industry."*

Gordon Bannerman, *corporate secretary, G. Bannerman Ltd.: "I think it's ever-growing and expanding at a heck of a rate. There have been more changes in the past 10 years than the 10 years before that."*

Dwayne Plessinger, *service coordinator, Steiner Corp.: "It's never been better for us. We're in a unique situation since we don't directly compete with too many other companies. Innovation is the edge in this market."*

Marion Meredith, *advertising manager, FMC: "Good. Our sales have grown over the last year."*

Jim Jenkins, *sales manager, Snapper: "The future looks good. But, as a whole, industry experts say there'll be little growth."*

Lee Markgraf, *operations manager, Kawasaki: "Positive. Our numbers are increasing. People are willing to pay more to get quality."*

Nic Smokey, *advertising manager, Tecumseh: "They're forecasting a two to three percent growth this year. It's a good outlook for equipment."*

Stan Kinkead, *sales manager, National Mower: "We're trying to make functional, simple machines. Sometimes the hardest thing to do is to build something simple."*

Dave Welfelt, *marketing manager, Excel: "Excel and company will continue to grow larger and smaller. We'll provide larger pieces in rotary mowing and continue to expand in the smaller end."* □

How to trim your time.

Think Green Machine

Weeds, grass, brush... even tree branches up to 4 inches thick! No problem for this team of gasoline powered string trimmers/ brushcutters/tree pruners from THE GREEN MACHINE®.

Model 2500 LP
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- 4" Tap-For-Cord™ head – optional blades

Model 3000 LP
- 1.4 HP, 25.4cc L-PAT engine
- For almost a decade has set the standard for professional landscaping
- Features all-position carburetor with re-circulating primer system
- 6" Tap-For-Cord™ head – optional blades

Model 4000 LP

Model 4500 LP (not shown)
- 2.2 HP, 41.5cc engine
- For specialized day-after-day trimming/brushcutting/tree pruning
- Equipped with harness, hip pad and wide handlebars
- Swivel driveshaft for hillside brushcutting and pruning
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- Model 4500 LP equipped with hand guards, brush and saw blades

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	72" out-front rotary w/gas engine	72" out-front rotary w/diesel engine	72" rotary or flail mounted on 4WD all-purpose turf tractor	16' self-contained rotary w/diesel engine	15' self-contained reel mower w/diesel engine	15' reel pull-behind gang mower w/diesel turf tractor	25' reel pull-behind gang mower w/diesel turf tractor
Approximate Initial Cost	$12,800	$13,600	$18,900	$34,800	$47,900	$34,700	$35,400
Fuel Consumption @ $1.00/gallon	1.25/hr	1.0/hr	.92/hr	2.52/hr	1.2/hr	.90/hr	1.35/hr
Acres per Hour (mowing capacity)	3.3	3.3	3.3	8.6	8.25	8.25	14.0
Hours Required to Mow 80 Acres w/P.M.	27.2	27.2	27.2	10.4	10.9	10.9	6.4
Hours Required to Mow 80 Acres Over 1 Yr. Period (50 mowings = 4000 acres)	1360	1360	1360	520	545	545	320
Labor Cost Per Year (Based on $7.00/hour)	$9520	$9520	$9520	$3640	$3815	$3815	$2240
Fuel Cost Per Year (Based on $1.00/gallon)	$1700	$1360	$1251	$1310	$654	$490	$432
Cost Per Acre (Based on 5 Yr. Period)	$3.45	$3.40	$3.34	$2.44	$2.56	$2.12	$1.73
Average Cost Per Year (Based on 5 Yr. Period)	$13,789	$13,609	$13,372	$9,732	$10,217	$8,475	$6,920
Average Cost Over 5 Years	$68,944	$68,046	$66,361	$48,660	$51,088	$42,374	$34,603
*Average Cost Over 10 Years	$137,888	$136,092	$125,716	$80,910	$76,933	$67,399	$53,463

** Based on necessary replacement of major components and/or entire machine over the given time period*

sources in order to ensure adequate engine life, optimum fuel economy, and efficient mowing. Generally, a reel or sickle will require less horsepower, while flails and rotaries require more.

Typical horsepower requirements for the various mower types are:

30-inch reel, 2.5 hp or .08 hp per inch; 72-inch rotary, 14.5 hp or .20 hp per inch; 60-inch flail, 12 hp or .20 hp per inch; 72-inch sickle, 6 hp or .08 hp per inch.

The terrain of the mowing area must also be considered when figuring horsepower requirements. A flat area will require less horsepower to power the tractor than a hilly area.

It should also be noted that high altitude, hot weather, and poor maintenance affect horsepower output.

Diesel vs. gasoline

Diesel engines are more fuel efficient and deliver better torque characteristics than their gasoline counterparts. A diesel engine will generally have a higher initial cost, but the life expectancy is higher.

Gasoline engines have fewer starting problems than diesels when the temperature falls below 20 degrees F, making them the preferred choice if the machine is used in winter applications, such as snow removal, etc.

Labor, mowing capabilities

Over a five-year period, labor costs can amount to more than 50 percent of a total mowing budget. The time it takes for various machines to mow the same area of turf becomes a very important factor.

Of course, a machine that mows five acres per hour will require fewer labor hours than one that mows three acres per hour.

The buyer will want to know the mowing capacity of the machine in acres per hour in order to figure the costs per acre. Width of cut and effective speed of operation are two main factors that determine mowing capability and economy.

Gang mowers, such as 5- or 7-gang pull-behind models, are the most economical mowers for large turf areas because more grass can be cut with fewer passes.

The comparison table shows how many different factors combine to formulate cost-per-acre calculations of various mowing machines. The chart accounts for normal maintenance, but does not include variables that may differ greatly from one situation to another such as unexpected breakdown, downtime costs, or length of mowing season.

Note that the pull-behind gang reels are the most economical in cost

per acre over a five-year period. The cost per acre of an 11-gang pull-behind is $1.73 compared to $3.45 for a gas-powered 72-inch out-front rotary. This represents a 50 percent difference in cost per acre between the two mowing machines.

That percentage of savings on the 11-gang mower increases as the time period grows or if the mowing area becomes larger. For instance, the cost per acre for the same 80 acres over a 10-year period on the 11-gang unit would decrease by 22 percent to $1.34.

The cost per acre for the gas-powered 72-inch out-front rotary would remain about the same over 10 years for the same 80 acres. This is because a rotary machine by nature wears out faster than a reel mower due to its constant high rpm operation and impact-style mowing.

...a small machine can be more expensive to operate per year than a large one.

It is likely that a rotary mower would need total replacement over a 10-year period with the given mowing schedule. This would mean that the percentage of difference in cost per acre between the 11-gang pull-behind and the gas-powered 72-inch out-front rotary would increase to 61 percent over 10 years.

In the given example, each 25 cents saved in cost per acre turns into a $10,000 savings over a 10-year period. Each $1 saved in cost per acre turns into a $40,000 savings over 10 years.

These results show that a small machine can be more expensive to operate per year than a larger one.

When figuring out a long-term budget, it may often be more economical to purchase a larger machine with greater horsepower and larger cutting width.

However, if only a small area of mowing is required, or where maneuverability around obstacles or in tight areas is important, a small mower or combination of large and small mowers will be more practical.

The main question when purchasing mowing equipment should be, "What can I get out of this machine in the long run?"

By knowing your mowing requirements, you will be better able to evaluate mowing machinery based on durability, life expectancy, fuel efficiency, quality of cut, cost per acre and cost per year. □

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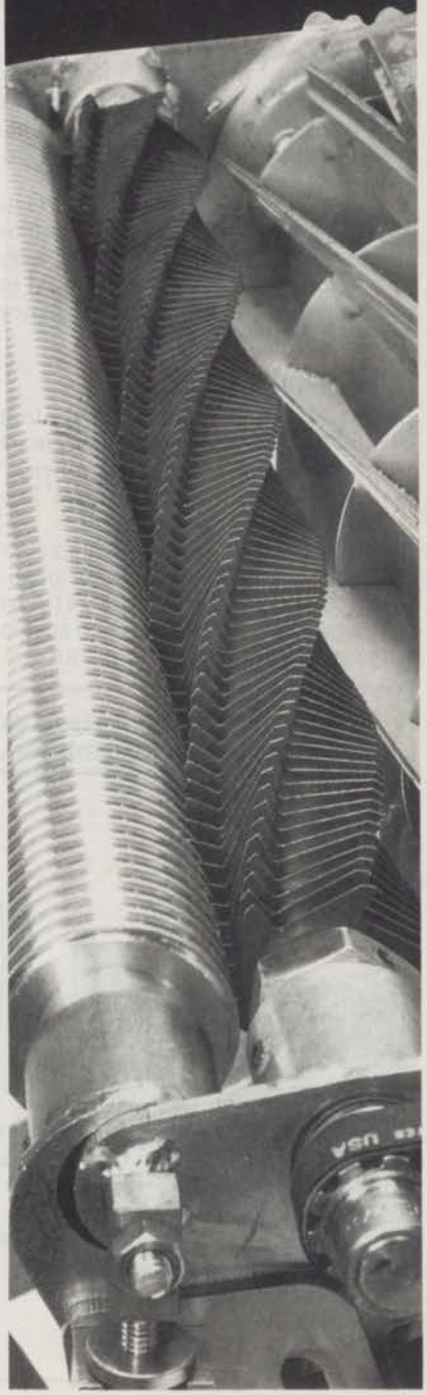


HELP WANTED

According to an exclusive WT&T survey, today's cemetery manager faces a large problem in finding capable help. Low wages resulting from low budgets put the manager in an unenviable situation.

by Ken Kuhajda, managing editor

Labor, restrictive budgets and weather. Today's cemetery landscape manager faces problems in those categories, according to a recent exclusive WEEDS TREES & TURF survey.

Today's cemetery manager is faced with unique landscape challenges, from rows of headstones that require special mowing to turf that is constantly being dug up and reseeded because of grave digging.

The job is challenging, the headaches that accompany can be substantial, but the rewards are there. Why else would the average respondent in our survey have 15 years experience at his current cemetery?

'Train, train, train'

By far the most pressing problem noted by 33% of the 56 respondents was lack of quality labor. Employees' skill levels usually match the low wage, noted several managers.

One respondent was open to suggestions about his employee problem. "We have a high rate of employee turnover. We try to adjust wages so both the cemetery and employee are happy. We give all employees some degree of responsibility," noted the manager.

The same manager said he gives employees a daily list of tasks to be performed and an employee may leave once he completes the list.

Still, he has not met total success. "I'm open to suggestions," he said.

Another respondent said "keeping employees happy" is his biggest problem. He does that through "lots of listening, praise, and concern for their welfare."

Yet another respondent quells his labor woes in a different way. "I hire as many retired and handicapped people as possible," he said.

When asked what he does to combat his labor woes, one respondent said quite simply: "Train, train, train."

The overall picture

Our survey indicated an average of 14.73 years at the same cemetery for managers.

The survey also revealed:

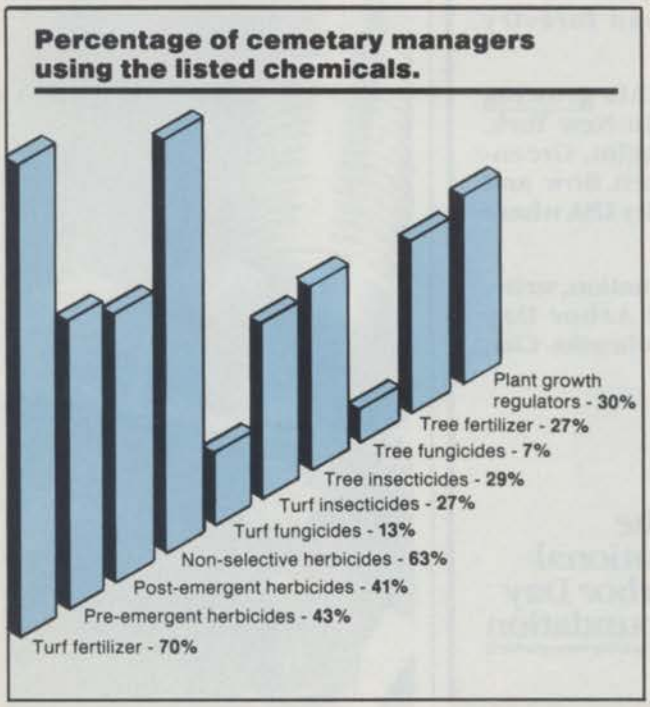
- an average developed acreage of 65.3 and average total acreage of 107.5;
- an average of one part-time and eight full-time employees;
- an average yearly expenditure of $2,237 on turf and tree care, including $1,638 on pesticides;
- an average annual equipment expenditure of $6,991 (in this category most respondents said expenditures depend on need and age of equipment).

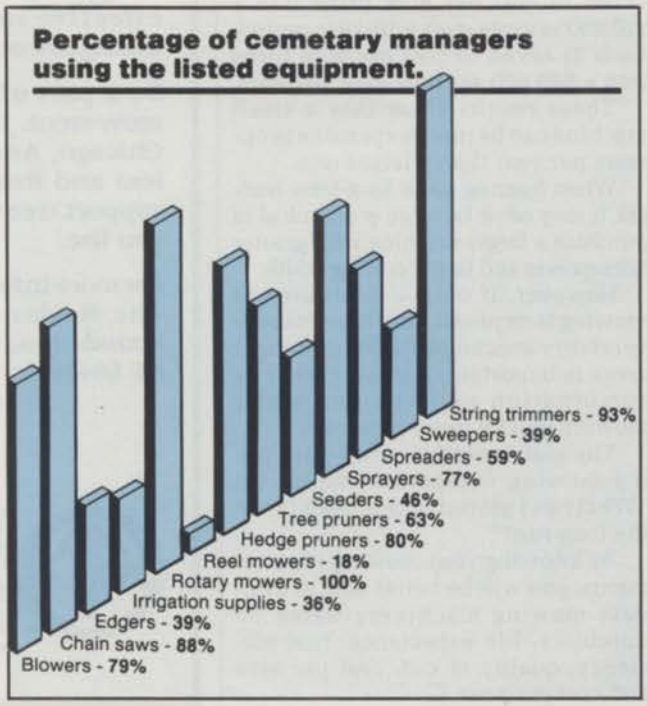
The survey asked managers what types of chemicals they use.

Their responses: 70% use turf fertilizer; 43% use pre-emergent herbicides; 41% use post-emergent herbicides; 63% use non-selective herbicides; 13% use turf fungicides; 27% use turf insecticides; 7% use tree fungicides; 27% use tree fertilizer; 29% use tree insecticide; and 30% use plant growth regulators.

"Most chemicals discolor or harm bronze memorials," said one respondent. "Other than spraying with 2,4-D, we don't use chemicals."

Another listed broadleaf weed control as his biggest problem. He uses chemicals under trees, around shrubs, ivy, and head stones, but says "thorough coverage is close to impossible. Also, the trees pick up


Percentage of cemetary managers using the listed chemicals.
Turf fertilizer - 70%
Pre-emergent herbicides - 43%
Post-emergent herbicides - 41%
Non-selective herbicides - 63%
Turf fungicides - 13%
Turf insecticides - 27%
Tree insecticides - 29%
Tree fungicides - 7%
Tree fertilizer - 27%
Plant growth regulators - 30%



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The Greens King® IV with the revolutionary new Turf Groomer™ greens conditioner has no equal for producing faster, truer greens, *without* lowering height of cut.

This unique, patented greens care system, a Jacobsen exclusive, concentrates on troublesome thatch and horizontal runners that can slow down putting, or even throw off putting accuracy.

The front roller "puckers up" horizontal runners and plant leaves, readying them for clipping.

Then, the powered knife blades rotate *through* the slots in the front roller, cutting horizontal runners and removing thatch that can choke a green to death.

The reel follows closely behind, neatly cutting the grass while it's still standing straight and true.

The result: Faster, truer putting and healthier, hardier greens, ready for play. And, you get all this without reducing the height of cut.

So, contact your Jacobsen Distributor to arrange a free demonstration. And, put this revolutionary new greens care system to the test on your own proving ground.

Exclusive roller design features bevelled edges to "pucker-up" horizontal runners.

The knife blades rotate through slots in the front rollers, slicing horizontal runners before they lie down.

The horizontal reel follows closely behind to clip grass while it's standing straight, for faster, truer greens without lowering height of cut.

Finance plans available. Jacobsen Division of Textron Inc., Racine, WI 53403. Telex: 264428.

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the chemicals."

And one manager has drastically increased productivity through chemical use. "In the past we used edgers to clean but that is time-consuming and costly. We are now using post- and pre-emergent herbicides. This is a one-man job opposed to the three men we used with edgers."

The survey also asked about equipment use. Every cemetery manager surveyed used at least one rotary lawn mower. The results in other categories: 79% use blowers; 88% use chain saws; 39% use edgers; 36% use irrigation supplies; 18% use reel mowers; 80% use hedge pruners; 63% use tree pruners; 46% use seeders; 77% use sprayers; 59% use spreaders; 39% use sweepers; and 93% use string trimmers.

The smallish budget

Several respondents listed inadequate budgets as their biggest problem, pointing to a lack of knowledge among the people controlling the purse strings.

Said one: "This is a church-owned cemetery. The biggest problem is making the trustees realize the cemetery is not a poor cousin. We do the best job we can with the equipment supplied. I talk to every lot owner I can and suggest they increase their endowment for lot care."

Said another: "We just don't have enough money to hire good help."

Added a third: "Limited funding and the age of the cemetery are our biggest problems. Cemetery maintenance is labor intensive. We are constantly searching for the most efficient methods available (like) eliminating trimming, using proper equipment, and using chemicals to reduce manhours where possible."

Perhaps another challenge facing cemetery managers is dealing with people in times of grief.

In addition to limited budgets, respondents mentioned weather as a huge headache. "The weather is quite a problem," said one. "By morning, all your plans can change." He said he has a back-up plan in case of poor weather.

Weather can be problematic for Midwest and Northeast managers when they prepare for their biggest day—Memorial Day.

"Preparing for Memorial Day weekend, our biggest and most significant day of the year, begins in early spring as soon as the weather and grounds allow," said one manager. "Numerous other spring tasks must be performed within this crucial time period, while at the same time, we must keep pace with our present obligations."

A Midwest manager said trying to keep the cemetery looking it's best for Memorial Day is his greatest challenge. "We hire extra help and pray that the weather cooperates. Then we hope that the mowers and trimmers don't all break down at once."

Another said weather creates problems when using liquid chemicals for weed control. "You have to play the game with nature's rules," he wrote.

Perhaps another challenge facing cemetery managers is dealing with people in times of grief. One manager related a lesson he has learned. "We realize people come first and then the maintenance."

The survey received a 28 percent response rate. **WT&T**

CEMETERIES: A different type of landscaping

A feeling of comfort is the aim of memorial park superintendents. That means attention to fine details, like well-manicured headstones and trees.

OAKWOOD MEMORIAL GARDENS

Jack Sloane

Time marches on.

Archibald Stadium in Syracuse, N.Y.—where football greats Jim Brown, Ernie Davis, Jim Nance, Floyd Little, and Larry Csonka used to romp—has been razed. The Carrier Dome has been "raised" in its place.

And literally in the shadow of the new dome lies Oakwood Memorial Gardens, where president Jack Sloane realizes that time, indeed, marches on.

Sloane, a 40-year cemetery veteran, will soon take with him the halcyon memories of sunny autumn Saturdays and Ben Schwartzwalder's Syracuse University football teams. In two months, he's turning operations of Oakwood Memorial Gardens over to son Greg.

Sloane's face crinkles with a smile and his eyes light up remembering the Orangemen. "Friends would always ask to park at the cemetery so they could walk to games. So I saw most of the games, because somebody always had extra tickets in exchange for a good parking spot."

Oakwood has the longer history (Oakwood was established in 1859, the university in 1870). And the cemetery's 200 acres sport 300 varieties of trees and shrubs, including a medisequoia tree whose seed came from Tibet and an out-of-place bald cypress which is normally indigenous to semi-tropical areas.

"The State University of New York (SUNY) College of Environmental Sciences uses our cemetery for teaching," says Sloane. "One year, they found gypsy moths and they had the state come in and spray for us."

Maintenance of the cemetery landscape is not easy, mostly because of vertical markers but also because of trees, shrubs, and rolling hills.

"One year, a mower salesmen told me his machine could mow anywhere. I told him to try one of our hills, so he brought his mower out. I never heard from him again," Sloane remembers, the smile returning.

Tulip-lovers would appreciate Oakwood's landscape, where 2,500 tulips make their annual spring appearance.

Another problem is the soil: clay over shale that drains well but is so hard that very little grows well.

Oakwood maintenance crews man seven Excel Hustlers and one new Ferris Co. (Onieda, N.Y.) 60-inch riding mower. Twenty-one-inch Lawn Boy push mowers and plenty of string trimmers are also used by the eight-person summer crew.

Though Sloane hasn't used pesticides in the past, they have been implemented recently.

"We've started a program for weed control," he observes. "We had a company fertilize and spray 2,4-D this spring.

"We're also going to try some grass retardants on some of the older hillsides.

"The last three or four years, too, we've been using Roundup around the vertical markers," Sloane adds. "We have kids with sprayers following our trimmers."

Because of its reputation, Oakwood always displays plenty of flowers. "This year, we've planted more than 2,500 geraniums, 500 narcissuses, 2,500 tulips, and $1,000 worth of petunias and marigolds," Greg notes.

The 40 years working for cemeteries (33 at Oakwood) have been good to the elder Sloane. He's met many notables, including Eleanor Roosevelt, who attended her son-in-law's funeral at Oakwood. Jack has also been president of the New York State Cemetery Association (1966) and the Syracuse Kiwanis (1967). He is current president of the New York State Turfgrass Association.

"I've enjoyed every bit of my career," he concludes, wistfully looking out his office window to the cemetery's landscape. "The nice thing is that you meet a lot of people and you're not tied down to a desk."

continued on page 41

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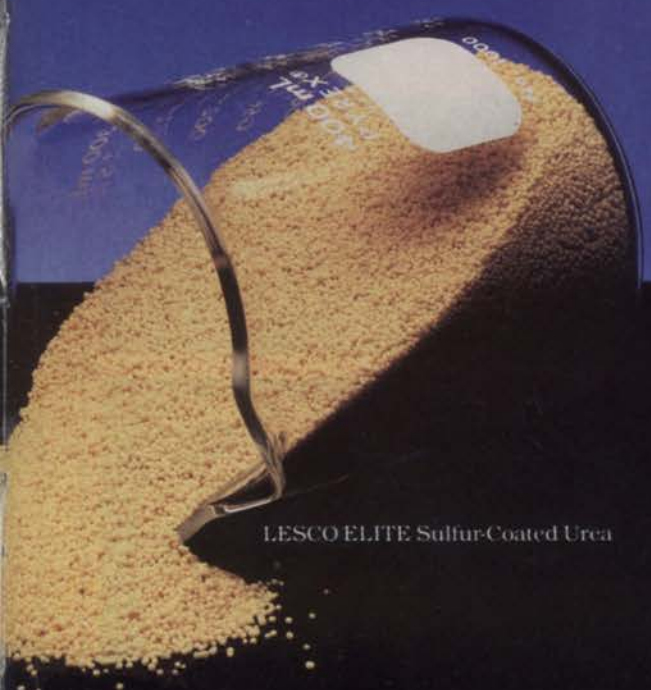

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LANDSCAPE PROFILE

ROSE HILLS

Oakwood's 600 burials a year pale in comparison to Rose Hills Memorial Park, which conducts about 30 services a day. Rose Hills is one of the largest—if not the largest—cemeteries in the country with 400 acres of lawn, 2,400 undeveloped acres and 20 entrances. The Whittier, Calif., cemetery has enough acreage to last another 175 years.

"John Gregg, the founder, used to tell us he had a dream," says gardening foreman Joe Hernandez. "He wanted to make this the biggest mortuary in the country."

Gregg passed away in 1959, but his dream lives on. Rose Hills conducted its 200,000th burial last fall.

"I enjoy the job," notes Hernandez, who has been at Rose Hills since 1958. "This is an entirely different ballgame than most landscape management. You have to be very careful what you say to the public and you have to be a little more respectful.

"People who come here are in a different frame of mind; they're not here for fun. But you get used to it like anything else."

The rose garden for which the cemetery is named contains 7,000 flowers. In addition, each of four churches have gardens, there is a Japanese garden and a garden at the Memorial Chapel.

"Roses do real well here," Hernandez observes. "But in April and May, it occasionally gets overcast and we have to fight mildew; in July and August we're fighting mites."

Most of the landscape is bermudagrass and kikuyugrass, though some poa annua exists. Grass is cut at 1¼ inches. The kikuyu gives Hernandez headaches.

"We tried to kill it out with Roundup," he says. "It seems like you burn the area out, but the darn stuff comes back."

Trimec and Mecomec are also Hernandez favorites. They are used for clover control. "I try and stay away from the stuff you need a permit for," he says.

Dallisgrass used to be a problem, but no more. "We were the first to use MSMA 20 years ago," remembers Hernandez, "but now we find that Roundup is just as good."

Rose Hills employs 20 landscape maintenance personnel, including regular crews for gopher control, tree maintenance, rose garden maintenance, and hand watering. ("Most of my boys have been here more than 20 years," he says. "My lead man has been here 30 years.") An additional 60 contracted workers of United Park Services help care for the cemetery's landscape.

Before contracting landscape maintenance to United Park Services, Rose Hills used seven-gang mowers. Now, it's strictly a few Locke walk-behinds and 30-inch Promasters, plus some 3-hp hand edgers and Weed Eater string trimmers.

Hernandez began as a temporary gardener/mower at the cemetery.

Above, the Rose Hills mausoleum, which features one of four gardens on the 400 acres of lawn. There are 2,400 undeveloped acres and 20 entrances at the Whittier, Calif., cemetery.

For 28 years, Joe Hernandez has roamed the almost 3,000 acres at Rose Hills cemetery.

"I figured the Army was going to catch me," he recalls. "But my wife caught me first."

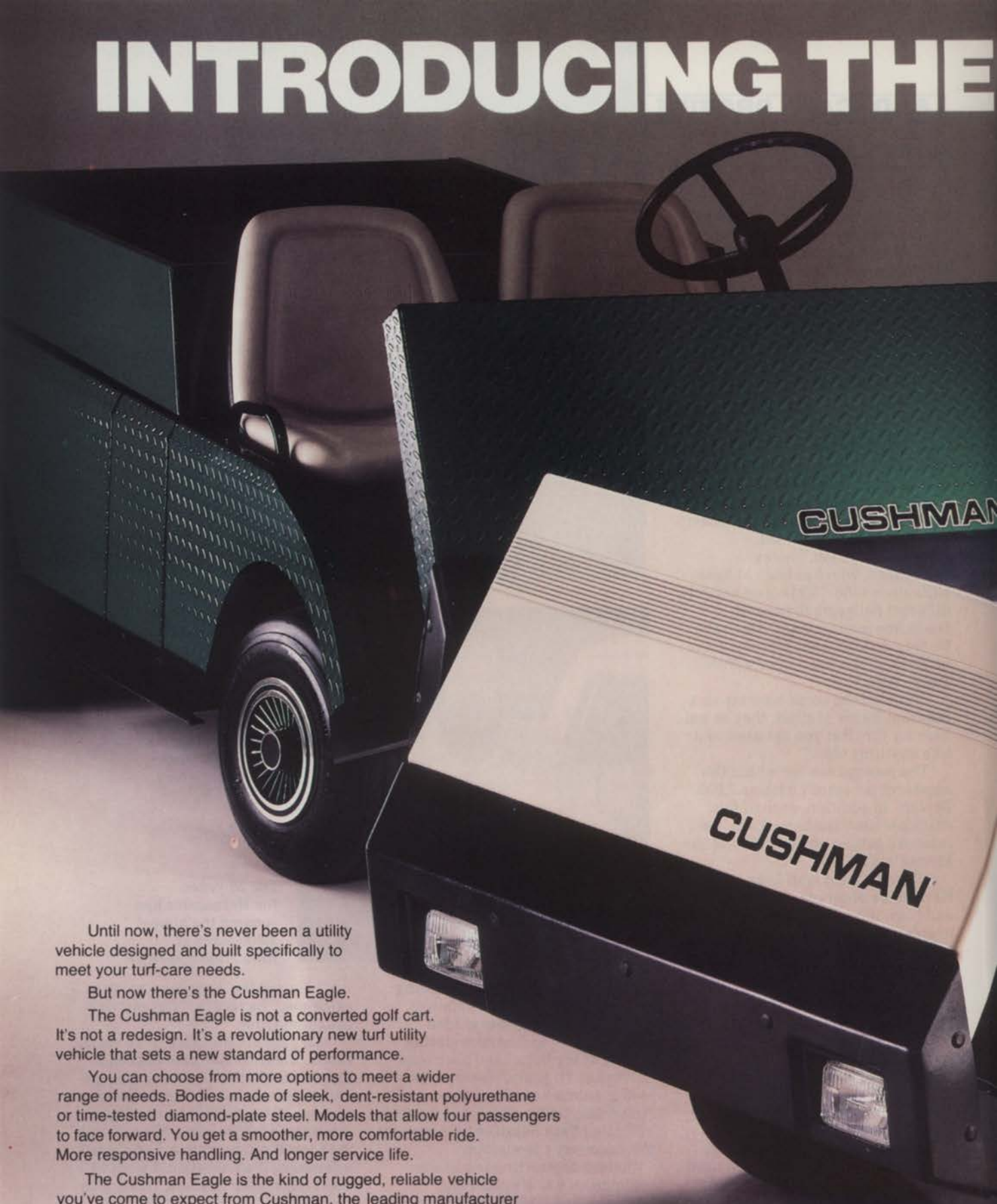
Mary Helen, his bride of 28 years, saw a career for her new husband. She visited Fullerton Junior College and registered Joe for horticulture courses. "I took the entrance exam and enrolled," Joe says. "Once I took the identification course, I really got interested. It snowballed. I went to night classes for 13 years, two nights a week."

His favorite task is visiting nurseries to buy specimens.

"I'm on the freeway a lot," he admits. "I look for plants ahead of time and like to spread my business around."

—Jerry Roche

INTRODUCING THE



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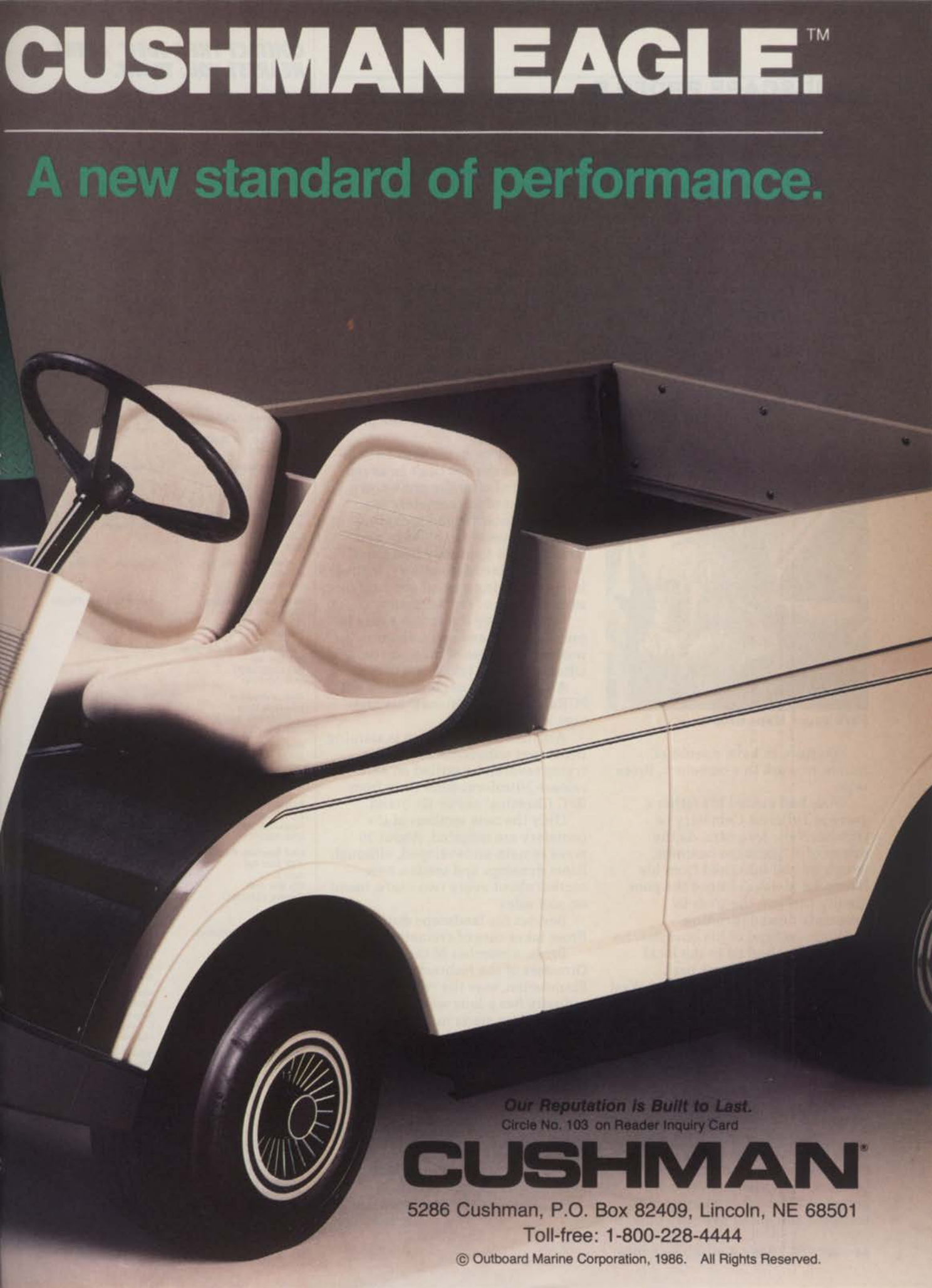

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LANDSCAPE PROFILE

HILLCREST/WEST LAWN

The policeman walked into the office and solemnly announced, "You're under arrest."

There must be some mistake, Hans Bross thought. But he looked out his door and saw his foreman with a camera. He knew it wasn't a mistake, just a practical joke.

His crime? Showing too many pictures of his grandchildren.

It was all to raise money for the American Cancer Society.

Park super Hans Bross.

You have to have a sense of humor to work in a cemetery, Bross says.

Bross had visited his father's grave at Hillcrest Cemetery in Omaha, Neb., for years. As the owner of a landscape business, which he had inherited from his father, he always noticed the poor quality turf and the trees in desperate need of pruning.

When he tired of his business, he answered a blind ad in the local paper, and soon became park superintendent at Hillcrest and West Lawn.

"He (the general manager) asked me if I had any qualms about working in a cemetery," Bross says. "I never had given it any thought. I had a bit of a misgiving that it would be a boring job. But I've been here 11 years and I haven't been bored yet."

The two cemeteries total 185 acres and are divided only in that flat markers are used at Hillcrest, while upright monuments mark graves at West Lawn. A crew of 10 full-time and about five part-time in the summer maintains both sites.

The biggest challenge? Trees. About 1,500 by Bross's estimate. At one time his crew removed about 40 Austrian pines. A recent wind storm ripped down five trees, including several rare American elms.

Just as a golf course superintendent essentially has every member as boss, a cemetery manager has to answer to every plot owner. And some do complain.

Buffalograss sparks many of the complaints. "It greens up late and turns brown early," he explains, his Paul Newman-blue eyes sparkling. "They think it's a weed. It's scattered. If it were all in one place I could explain it."

The other problem with buffalograss is that the sod can't be saved and replaced after the crew digs a grave. Most of the cemetery is a fungus-resistent blend including Baron, Georgetown, Fylking, and Benson A-34 Kentucky Bluegrass with some fine Manhattan rye. Bross is even growing a small sod field to save on costs of replacements.

When saving the sod, it's easy to pinpoint grub and sod webworm problems. A dose of diazinon or Oftanol usually takes care of it.

Although he's experimented with PGRs around headstones, his crew uses Weedeaters.

Another major concern is staining the stones with fertilizers. After trying several, he settled on slow-release Nitroform-Blue Chip from BFC Chemical or Par-Ex brand.

Only the new sections of the cemetery are irrigated. About 30 acres remain undeveloped, although Bross develops and seeds a new section about every two years, based on plot sales.

Besides his landscape duties, Bross takes care of cremations.

Bross, a member of the Board of Directors of the Nebraska Turfgrass Foundation, says the cemetery industry has a long way to go. "Until this industry starts to recognize that there are professionals out there and will pay accordingly, they're going to have problems," he says.

He'll work for the cause now, but he talks frequently of retiring, taking off in a motor home, and spending winters traveling through the South with his wife Eleanor. Of course they'll always return to Omaha to be near the grandchildren.

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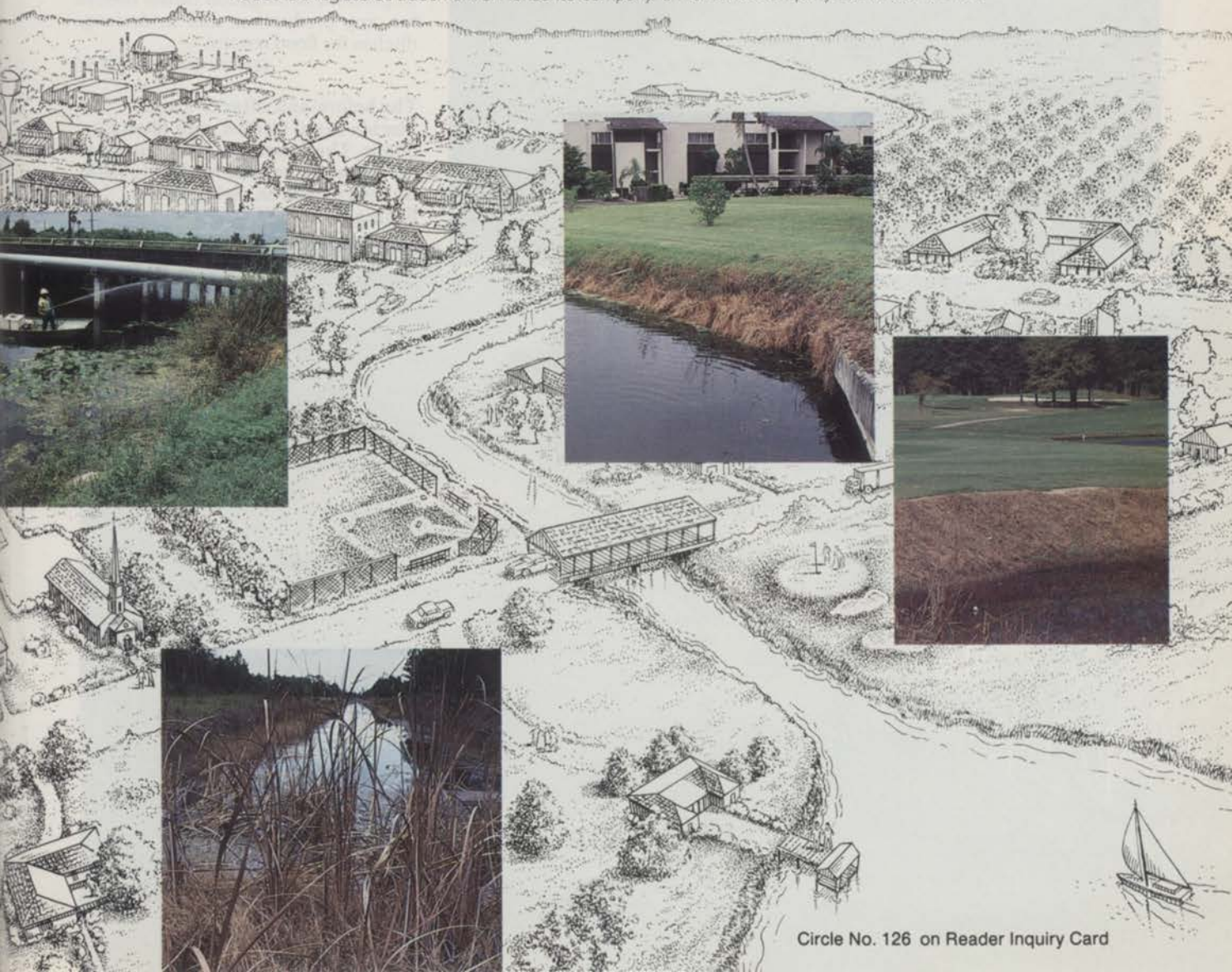

Circle No. 126 on Reader Inquiry Card

CURING WATER WOES

Many methods exist for control of undesirable water weeds. Your choice depends on your individual situation.

The development of populated areas has imposed ever increasing demands on the world's water systems.

The need for clean and open water for drinking, transportation, livestock watering, irrigation, and power has become more significant. In addition, recreation has furthered the need for water systems that are clean and weed free.

Over the years the clearing and farming of land has changed the rate of nutrient runoff to water systems. Fertilizer, sewage, and industrial wastes have thrown natural water bodies out of balance, accelerating the growth of many undesirable aquatic plants.

In addition, the introduction of exotic plants (plants not native to an area that have no natural checks on their growth such as insects, fish, or disease) often out-compete native plants which do have natural growth restraints.

Some plants are essential to the aquatic environment, producing oxygen and serving as food and habitat for fish and other forms of life.

These plants become problems when they interfere with our water usage. Aquatic weeds can clog intake screens and turbines used in the production of hydroelectric power. Weed infestations provide a breeding site for mosquitos and other vectors of human and animal disease.

In water reservoirs used for drinking purposes, certain vegetation can impart an undesirable color and/or odor to the water. Navigation lanes can be hindered, even closed.

Recreational activities such as boating, fishing, swimming, and water skiing can be restricted. Weed problems can reduce the value of property and businesses near bodies of water.

Aquatic weeds may also reduce or severely restrict water flow (as much as 90 percent) in irrigation canals needed for crop production, and in drainage ditches for flood control.

continued on page 50

The before-and-after of a south Florida canal treated with Elanco's Sonar. The product is EPA-approved for use as an aquatic herbicide with no restrictions on swimming or fishing.

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Circle No. 222 on Reader Inquiry Card

AQUATIC *from page 46*

To combat the potential hazards of aquatic weeds and to manage a water system, man has used a variety of methods.

Among those are mechanical removal (dredging), which can be expensive and often inefficient. In many cases, dredging removes important nutrients from the soil, nutrients needed for the growth of desirable plants.

Another mechanical method is weed harvesting, a good temporary solution but lacking in long-term effectiveness.

Weed removal (actually removing the root systems from the soil) can be effective but is laborious.

Mechanical aerators can help in the weed war (see accompanying story).

A promising method

A promising management alternative is chemically treating weeds with aquatic herbicides. (Before considering use of an aquatic herbicide, make sure it is labelled for use in aquatic systems.)

Through technological advances in recent years, many chemicals—including diquat, copper-containing compounds, acrolein, 2,4-D, endothall, and Rodeo—have been developed for aquatic weed control.

Chemical weed management provides long-lasting results and is economical.

Environmental effects on invertebrates and small sport fish with the use of herbicides is often less than the effects with mechanical removal of aquatic vegetation.

Also, certain chemicals may be selective for target species, helping to control the unwanted plants and allowing desirable vegetation to survive.

No. 1: identify the weed

The aquatic manager has several options available for controlling unwanted aquatic vegetation. How does one decide which herbicides to use? Here are some points to consider:

- Of utmost importance is proper identification of the weed species present. It is imperative that the weed species susceptibility coincide with the herbicide selected to insure desired control.
- Be certain the herbicide you choose is approved in your state and that permits are acquired before treatment, if necessary. (Always read the entire herbicide label for use directions, cautions, and precautions before using.)
- Determine the size of the treatment area.
- Purchase the correct chemical and amount needed for the treatment.
- Select the appropriate application equipment.
- Post water use restrictions if necessary and inform the residents of the area to be treated that these restrictions are in effect.
- Always wear protective clothing when handling and applying chemicals.
- Apply the herbicide through approved equipment, delivering an even application.
- Triple-rinse containers in the water and dispose of properly. Store unused chemicals in a safe place in their original containers.

Aquatic weeds (may) reduce or severely restrict water flow (as much as 90 percent)....

One recent entry into the aquatic weed control market is Elanco's Sonar (fluridone). Sonar is an aquatic herbicide that provides effective management of vascular weeds in ponds, lakes, drainage canals, and rivers. It controls a broad spectrum of floating, emersed, and submersed weeds as well as shoreline grasses at low application rates.

Sonar is a slow-acting herbicide, requiring 30-90 days for the desired management of aquatic weeds. Due to its slow activity, the rate of vegetation decay is slow, there is no sudden depletion of dissolved oxygen in the water, and the potential for a fish kill is minimized.

Sonar is EPA-approved for use as an aquatic herbicide with no restrictions on swimming, fishing, or domestic use.

Monsanto's Rodeo (glyphosate) aquatic herbicide is a non-selective, broad spectrum, post-emergence herbicide that offers control of more than 90 varieties of emerged grasses, broadleaf weeds, and brush growing in and around aquatic sites.

Rodeo is foliar absorbed within a few hours after treatment, creates no residual soil activity, and is biodegradable.

Plant response after application may not be visible on annuals for two to four days while response on perennials usually takes one week.

Rodeo destroys the plant—leaves, stems, and roots.

The timing of treatments and the choice of formulations can allow the user to be somewhat selective in the types of vegetation he controls. Elanco's Sonar is extremely effective on hydrilla, milfoil, pondweeds, duckweed, cattails, and some grasses.

Floating weeds

The most widely-used aquatic herbicides for floating weeds are 2,4-D, diquat, Rodeo, and Sonar A.S.

Treatments should be made during the active growing season of the weed species for best results.

A foliar application is necessary to control floating weeds. All of these treatments are liquid formulations and even coverage is recommended.

Any type of liquid sprayer that can be calibrated to deliver the herbicide accurately can be used. Always follow the product label for rates and water use restrictions

Submersed vegetation

For treating submersed vegetation, the most commonly used herbicides are endothall products, diquat, granular 2,4-D, Sonar A.S. or Sonar pellets, and copper-based compounds.

The liquid products can be surface applied but a sinking agent should be added for improved efficacy.

Generally speaking, the contact herbicides for submersed vegetation are not very selective, although 2,4-D is more selective than diquat or endothall. Read the entire herbicide label for use directions, cautions, and precautions for each product.

Some of them are quite specific: for example, endothall requires a water temperature over 65 degrees F for best results. When treating for algae, you must choose between chelated copper or copper sulfate. Water pH and hardness are factors to consider when making your decision.

Emersed vegetation

For emersed vegetation, the most commonly used herbicides are Rodeo, diquat, and 2,4-D.

To control emersed vegetation, a foliar application is necessary. Treatments should be made when the wind is calm and no rain is expected.

A sensitive environment

The water system is a uniquely balanced and sensitive environment. When that balance is interrupted, problems almost inevitably surface.

The best way to manage aquatic weed problems is through a licensed, qualified aquatic weed control applicator. He has the expertise to prescribe the best treatment and carry it out properly.

In the case of aquatic weed control, it is best to leave it in the hands of a professional. **WT&T**

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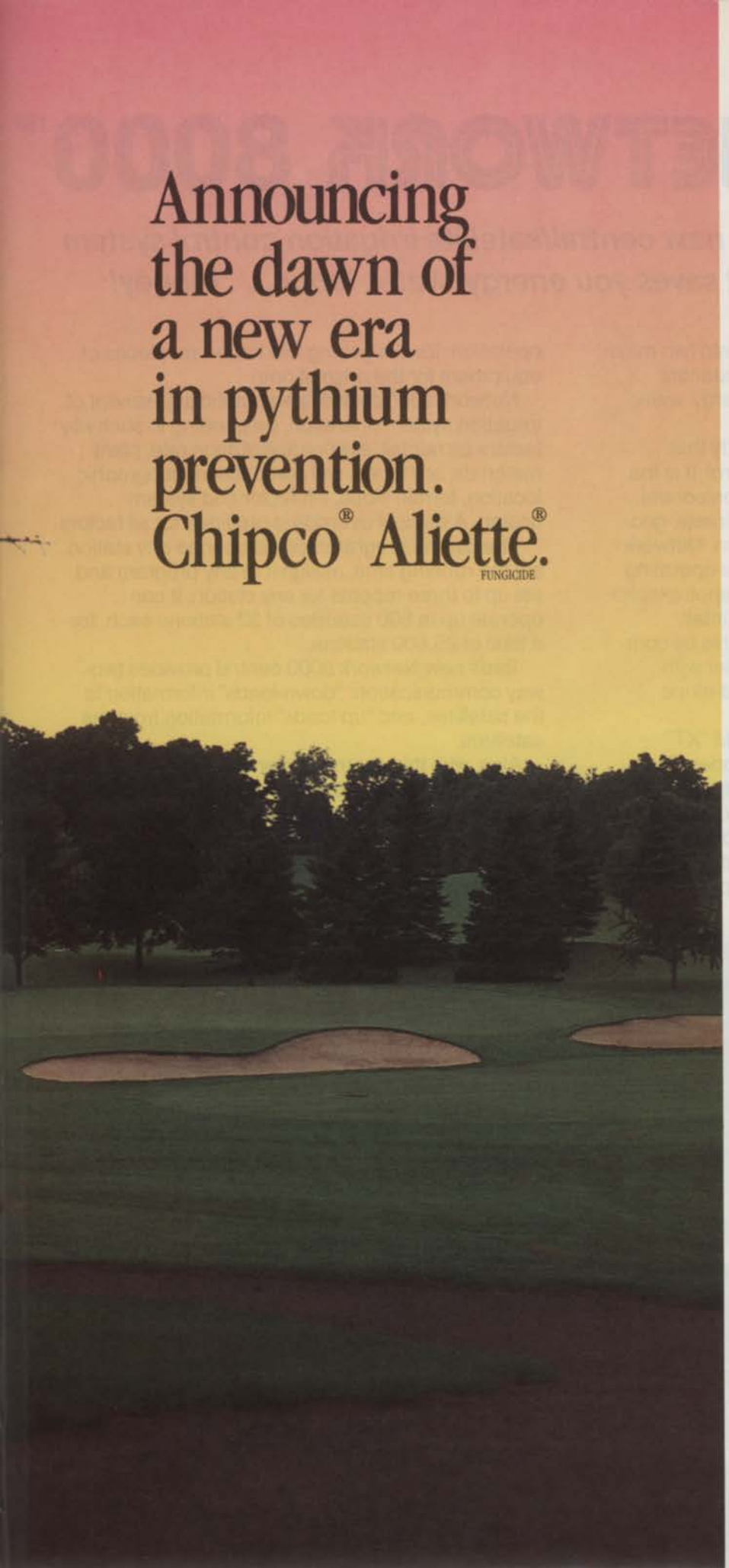

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TORO NETWORK 8000™

The new central/satellite irrigation control system that saves you energy, water, labor . . . money!

Superior irrigation control translates into two major advantages: better turfgrass and substantial reductions in the use and costs of energy, water and labor.

Toro's *Network 8000* provides exactly that: demonstrably superior irrigation control. It is the first and only totally automatic irrigation control system. Just enter design, weather/climate, geographical and agronomical information. Network 8000 then *automatically* computes the operating times for all stations, based on the evapotranspiration rate, modified by an applicable rainfall.

Network 8000 accomplishes all of this by combining a computerized central controller with satellites of amazingly extensive stand-alone capabilities.

The central controller utilizes an IBM "XT" personal computer as the hub of the operation, including keyboard, color monitor, matrix printer and a light pen for easy access to all functions.

This non-dedicated central is capable of "transparent" multiple function, which provides for *simultaneous* business and irrigation program operation. It's like getting two important pieces of equipment for the price of one!

Network 8000 provides automatic adjustment of irrigation system operation, responding to such key factors as rainfall, evapotranspiration rate, plant materials, soil types, soil compaction, geographic location, terrain slope, Ph factor and system design. A manual override is provided for all factors

The central programmer will operate any station, set the running time, assign it to any program and set up to three repeats for any station. It can operate up to 800 satellites of 32 stations each, for a total of 25,600 stations.

Toro's new Network 8000 central provides two-way communication: "down-loads" information to the satellites, and "up-loads" information from the satellites.

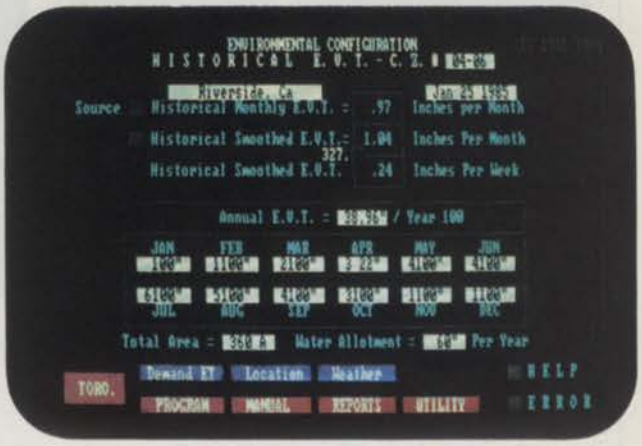
Also, with this central station you enjoy the advantages of water-budgeting by means of percentage increase/decrease control (by station, by program, by CSG, or the total system), from 1% to 900%.

But this is only the beginning of the story. You have to see it perform to fully appreciate exactly what it can do for you and your irrigation. Call *The Man from Toro* for a no-obligation demonstration.

Key components to Network 8000 are the IBM "XT" personal computer with color monitor and keyboard, operated with handy light pen. Shown in the middle is Toro's Delay & Distribution Unit. And on the right, the IBM matrix printer and stand.

TWO TYPICAL SCREEN DISPLAYS

This screen quickly displays complete irrigation program for one full day, for each of 14 days in the system.



Such essential data as evapotranspiration rates for your specific area can be called up to help set proper program.

NETWORK 8000 SATELLITE CONTROLLER

Solid-state satellite may be centrally programmed or provide stand-alone capability.

Matching the Network 8000 central for advanced and innovative design is Toro's new satellite/stand-alone solid state controller. It is a 32-station unit, with each station capable of operating three Toro electric valve-in-head solenoids.

As with the central, this new satellite offers two-way communication. It receives, stores and sends all commands generated by central. At the same time, it up-loads to the central such key factors as satellite status, changes made in station timing at the satellite, and failure sensing.

Each station is capable of minute and hour timing, from 1 minute to 4 hours and 15 minutes per station, in one-minute intervals.

Toro's new Network 8000 Satellite also provides water-budgeting capability, with percentage increase/decrease from 1% to 900%.

The combination of the equally amazing new satellite and central controller makes Network 8000 your first step into the 21st Century, with payoff now in terms of better turfgrass at lower costs.

The Toro Company, *Irrigation Division*

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The Otterbine floating aerator, manfactured by Barebo, can provide round-the-clock control of algae.

Alternatives to chemical water weed control

Although most chemical treatments are labeled safe for the environment, some people choose to control aquatic weeds naturally. Three ways to do this are with a mechanical aerator, liquid water shading products, or weed-eating fish.

"Chemicals scare the hell out of me," says Charlie Barebo, general sales manager for Barebo Inc., manufacturers of Otterbine floating aerators.

Barebo describes his aerators as "an ongoing management tool." The Otterbine can work around the clock, throughout the season.

Another advantage is that you can use the pond for irrigation at any time, without waiting for a chemical to dissolve.

The aerator's main function is to add oxygen to the water and break down the thermal stratification. This mixes the warm water on top, which promotes algae growth, with the colder water on the bottom.

When the algae dies, it decomposes on the pond's bottom, bringing forth anaerobic bacteria to breakdown the algae and creating a bad smell. The aerator keeps oxygen flowing, eliminating the odor and promoting decomposition.

Such biological control can take time. Aerators take between four to six weeks to be effective.

Barebo estimates equipment costs from $600 to $4000, depending on the size of the pond or lake.

Dr. Paul Beatty, Southwest Aquatics in Palm Desert, Calif., says the grass carp give the landscape manager a biological alternative when fighting aquatic weeds.

The aerator is used at 1 ½-hp per acre. A long narrow body of water, for example, would use two smaller units better than one large one.

Most aerators are installed with a time clock, to be used as needed. New options which will be available with the aerators include aesthetic spray patterns, nightlighting, and special electrical control panel.

The aerators originated in 1925 for use in waste water treatment plants. Many manufacturers still deal only with such places.

Barebo is the only company which concentrates on the turf market. "We saw a nice market niche here," Barebo explains.

Filling the need has resulted in 150 percent growth for Barebo the last five years.

Today they sell about a third of their products to golf courses. The Otterbine is also used in places such as parks, fire retention ponds, and at Sea World and Knott's Berry Farm.

The aerator can be used in conjunction with a chemical treatment, since it will mix the chemical throughout the water. Because it produces oxygen, the chemical will also be more efficient. But Barebo prefers to stay away from chemicals.

"A combination of lake dye and aeration is the best way to control weeds," Barebo says.

Billie Wilson, president of Aquashade, agrees that using the products together is advantageous.

The product Aquashade, a lake dye, actually reduces certain wavelengths of sunlight, inhibiting photosynthesis of plants. It dyes the water blue and suppresses plant growth for up to six weeks.

The dye is best applied in early spring, but can be used any time of the year, including over ice in the late winter.

Aquashade can be poured from the edge of the pond and will automatically mix throughout the water. An aerator improves mixing action.

It's applied at the rate of one gallon per four acre-feet (a pond four feet deep covering one surface acre would need one gallon for control).

It costs approximately $52 per gallon. One gallon of Aquashade treats more than a million gallons of water.

"There's no pesticidal activity," Wilson explains. "Most chemicals have a way of killing what's in the water."

A disadvantage is that Aquashade won't work in ponds which have water flowing out of them.

Wilson says her biggest customers are farm pond owners and golf course superintendents.

Another natural way to control aquatic weeds is the grass carp.

Registered for use in some areas, the grass carp consumes two to three times its weight each day in plant materials. Some grass carp weigh close to 100 pounds.

Dr. Paul Beatty of Southwest Aquatics in Palm Desert, Calif., reports the grass carp is doing well in experiments in the Palm Springs area. The fish is legal for use in parts of extreme southeast California.

(Check with wildlife officials to determine whether the grass carp is registered for use in your area.)

Beatty notes the fish cost $10 each (imported from Arkansas), live 12 to 15 years, and are compatible with other fish species.

"They don't compete directly with any other fish for food," he says.

Beatty recommends 6 to 25 fish per surface acre for adequate control.

Problems with the grass carp include their non-selectiveness. They'll eat most anything that's green, including desirable vegetation. That could leave little for desirable species like bass.

Beatty reports the fish are more susceptible to copper than other herbicides, which means copper treatments must be used judiciously.

"The fish are not the total answer," he says, "but they are another biological control mechanism." □

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Circle No. 125 on Reader Inquiry Card

JUDGING THE EFFICIENCY OF YOUR PLANNING PROGRAM

You've implemented a planning program and it's in full gear. Now you need a tool to judge the plan. Two techniques from industry may be of help.

by Rudd McGary and Ed Wandtke

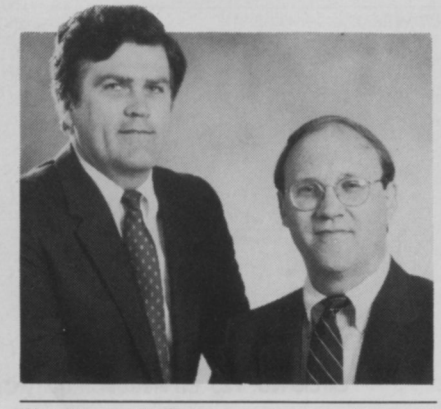
In recent months we have written about planning and the necessity for any organization to have a clear objective in order to achieve its goals. One of the questions we've been asked is "how do I judge the effectivenesss of my planning?"

To do that, let's examine some evaluation techniques which have been used in other areas of American business.

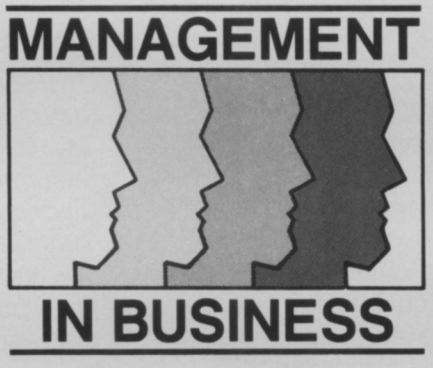
Two of the major models in use in production industries are the Critical Path Method (CPM) and the Program Evaluation and Review Technique (PERT). Both are applicable to the green industry.

(In this short space, we will examine only general concepts.)

The PERT technique was first used in the defense industry, specifically in designing the Polaris submarine. At the same time the DuPont company designed a scheduling tool, CPM, for use in the industrial world.



Wandtke and McGary are senior consultants with All-Green Management Associates in Columbus, Ohio. Dr. McGary focuses on marketing and management issues. Wandtke focuses on operations and financial questions.



Both evaluation techniques are applicable to the green industry.

The key to both models is the ability of management to assess a critical path of accomplishment. This deals with the actual tasks to be completed, the sequence in which they should be completed, and the expected completion times for each major task.

With the PERT model, estimates on the time needed for completion of critial activities is given in three ways: the best possible, the worst possible, and an average length that the task will take.

PERT is a model run by statistical methods and there are many major texts available for better understanding.

An example of using the PERT technique in golf course work would be to start the planning for the year by determining the major tasks to be done over the season. These could include hole redesign, major sod replacement, equipment preparation, tournament planning, and new underground sprinkler installations, and would be scheduled for an entire year.

After assessing the jobs, you then consider the question of costs, labor, and critical timing.

As each one of the critical tasks is accomplished, it would be reviewed based on the original plan and the time needed to actually complete the tasks.

This analysis would give you an idea of how effective your plan was in addition to the effectiveness of the management of the tasks.

The keys are to plan the entire season, to break the season into critical tasks, to have clear-cut evaluation techniques, to make the time to compare the results to the plan, and to look at the final evaluation to see if the overall management function could be improved.

The key to both models is the ability of management to assess a critical path of accomplishment.

These techniques are considerably more complex than the descriptions used in this column. With full application, the techniques can be useful for those in the green industry who are interested in better planning and evalation of the organizational efforts for the year.

Although it appears these techniques are limited in application, they can assist the advancing firms in all areas of their business including accounting, operations, personnel, and marketing. **WT&T**

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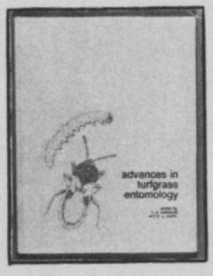

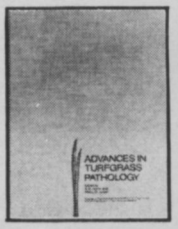

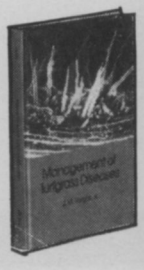

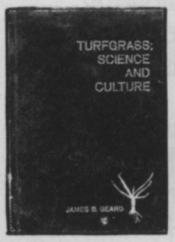

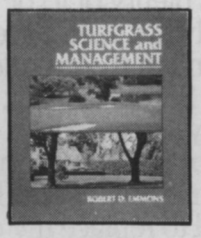

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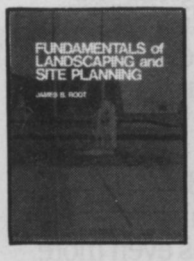

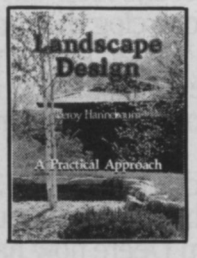

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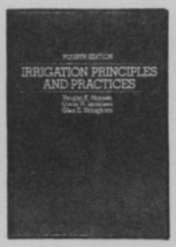

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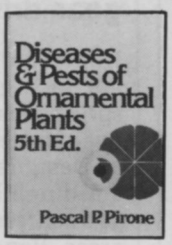

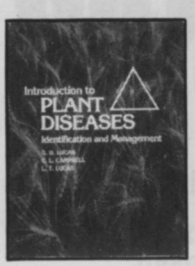

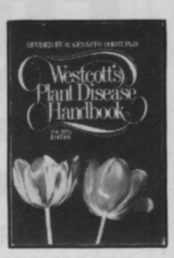

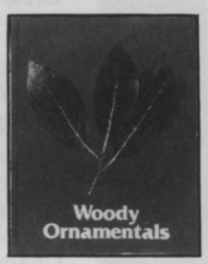

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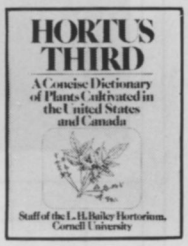
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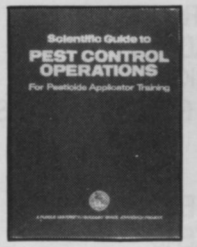

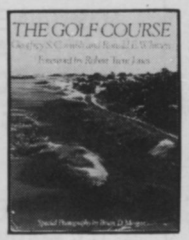

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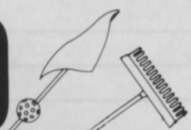

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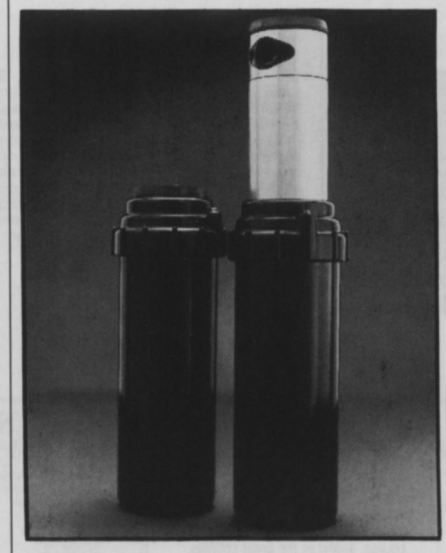
Circle No. 135 on Reader Inquiry Card

PRODUCTS

Hunter introduces gear-driven sprinkler

Hunter Industries' I-40, a new moderate to high-capacity, gear-driven sprinkler is available to suppliers on a five-day delivery program.

Designed for vandal-resistance and durability, the I-40 can be used on golf courses, playing fields, and public areas. Vandal-resistance features include a clutch-protected drive system, a locking cap, and heavy-duty stainless steel retraction spring.



The product has a verified discharge range of 6.3 gpm within a 45-feet radius up to 25.8 gpm within a 67-foot radius. The I-40 is constructed with a stainless steel riser and nozzle turret assembly, and is available in 17 fixed arcs and a full circle.

The product comes with a five-year, unconditional, over-the-counter warranty.

Circle No. 190 on Reader Inquiry Card

Universal sorbent is for pesticide spills

The last thing in the world a pesticide applicator wants is a spill. But they happen.

In that event, Diamond Shamrock Chemicals Co. has announced a new universal sorbent that can be carried with pesticides on trucks. Hazorb, pound for pound, provides 15 times more pick-up than clay sorbents, according to Diamond Shamrock research.

Hazorb is a unique foamed silicate glass that provides one gallon of pick-

THE WEEDS TREES & TURF BUYER'S GUIDE WANTS YOU!

If you are an equipment manufacturer, chemical reformulator or seed producer for the lawn care industry, you qualify to be listed in the Buyer's Guide, complete and return this coupon. We'll send you a questionnaire to fill out to make sure you are included.

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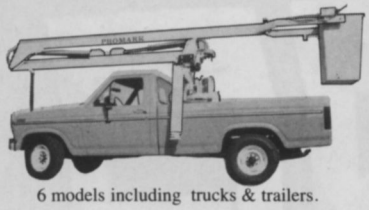

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THE LEADER IN INNOVATION

Circle No. 131 on Reader Inquiry Card

up per pound. It won't burn, dissolve or pollute, says the manufacturer.

Hazorb, which is packed in "pillows," is inert to most chemicals except hydrofluoric acid. It can be landfilled, fixed, neutralized or displaced by liquids of a higher density.

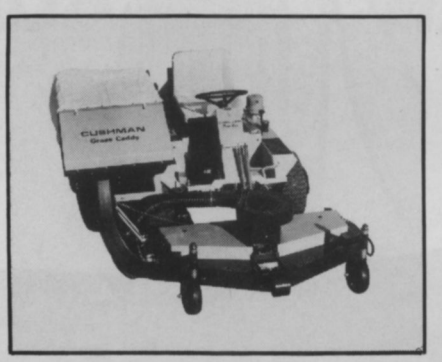
Circle No. 191 on Reader Inquiry Card

Air injection system ups air volume by 30%

OMC Lincoln's new air injection system for the Grass Caddy attachment for Cushman Front Line Mowers increases air volume in the pickup chute by 30 percent.

It is standard on all Grass Caddy attachments and is available for retrofitting the air injection systems on Grass Caddy attachments already in the field.

The system utilizes a "cushion" of fast-moving air along the inside surfaces of the chute, helping carry



leaves and trash up to the caddy without touching the walls of the chute, and thus preventing plugging. The system consists of a 10-inch cast aluminum blower wheel that is V-belt driven by the Front Line mower deck gear box. The blower moves only air. Trash and clippings do not pass through the blower itself.

Circle No. 192 on Reader Inquiry Card

Lawn Restore can aid patch disease fight

Lawn Restore, a bio-organic fertilizer based on advanced microbiological and protein technology, helps build fertility into the soil rather than cause depletion. Three years of research and testing have confirmed that Lawn Restore eliminates conditions that promote fusarium and patch diseases, according to the manufacturer, The Ringer Corporation.

In tests conducted in 1985, Lawn Restore was found to be the first product even proven to reduce thatch buildup. Additionally, the product produces lush, vigorous turf with deep roots, resulting in a lawn that stays green longer and requires less watering.

Distribution now extends into the additional Midwest and Eastern states.

Circle No. 193 on Reader Inquiry Card

Polyethylene fence ideal for sports fields

Fence-It is a lightweight barrier fencing specifically designed for softball and baseball fields, ski slopes, outdoor tournaments, and other sporting events requiring designated playing and viewing areas.

The easy-to-install Fence-It reduces the risk of injury by flexing on impact, allowing a player to make contact with either the post or the fence. It then springs back to its original position. Fence-It is made of high-density polyethylene, allowing the fence to elongate up to 60 percent of its original length before damage occurs.

Fence-It comes in several colors including red, blue, orange, green, and black.

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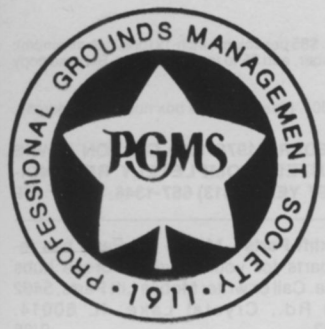

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Sales Professional: To the Greens Industries in Mid-Atlantic region; must have "2 years" sales experience selling to lawn care, landscape, and tree care firms. A good knowledge of the business and customer's needs is necessary. Excellent compensation package offered. Please send resume to: Moyer & Son, Inc., 113 East Reliance Road, Souderton, Pennsylvania 18964. Attn: Specialty Fertilizer. 8/86

HELP WANTED: Land Estimator - KT Enterprises, Inc. is expanding its landscape installation department & has a challenging new position in our fast growing firm for the right person with exceptional sales ability. Must be experienced in take-offs and costing. Progressive design/build firm doing business in Washington, D.C. Metro area. Excellent salary, benefits & growth potential. Call John Warren 703-922-8540. 7/86

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TURF PRODUCTION MANAGER: Expansion has created a production manager position on our farms in S.C. (approx. 500 acres). We expect five or more years experience in sod production and an academic background in turf management or a related field. This is an excellent opportunity for a growth-oriented individual. 1-800-328-2110. 7/86

GOLF COURSE MECHANIC—Phoenix, AZ area. Must be very experienced with skill in hydraulics, precision cutting units, general and overhaul mechanics and metal fabrication. High regard for detail and organization is demanded. Salary competitive, excellent benefits. Persons qualified and interested in learning more about this position send resume to: Recreation Centers of Sun City West, Inc., 19803 R.H. Johnson Blvd., Sun City West, AZ 85375. 7/86

Irrigation Designer & Installation Supervisor—Experience a must!! Send resume to P.O. Box 157, Fairburn, GA 30213. 7/86

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HELP WANTED - A diversified growing landscape company in the Northeast is looking for experienced people for Landscape Design, Construction and Maintenance as Supervisors and Managers. Salary to be determined by experience. Send Resume including work and salary history to: Control Env. Services, Inc., 333 Meadowland Pky., Secaucus, NJ 07094, attn: J.R.B. 7/86

LANDSCAPE MAINTENANCE. Top notch Washington D.C. area landscape firm is looking for a responsible foreman to do residential maintenance, emphasizing quality tree, shrub and bed care. We are also seeking a spray technician trainee to assist with our integrated test management program etc. Good pay with benefits. No weekend work. Willingness to work hard and produce is essential. Related education or experience preferred. Send resume and references to: Garden Gate Landscaping, 821 Norwood Road, Silver Springs, MD 20904. 7/86

Tree Service Contractor is looking for bucket truck operators, tree climbers and spray operators to work in South Central North Carolina. We are looking for experienced individuals willing to work hard and be able to move up to management. Good pay and benefits to qualified persons. One of the top tree care companies in the area. Send resume and photo to Olin Tree Service, P.O. Box 635, Pinehurst, NC 28374 or call (919) 947-2741 between 9:00 A.M. and 1:00 P.M. 7/86

Irrigation - Installation. Specialist for medium and large commercial work. Must have minimum 2 years experience and knowledge of design and hydraulics. Please send resume and salary requirements to Northwest Landscape Industries, 16075 S.W. Upper Boones Ferry Rd., Tigard, OR 97224. 7/86

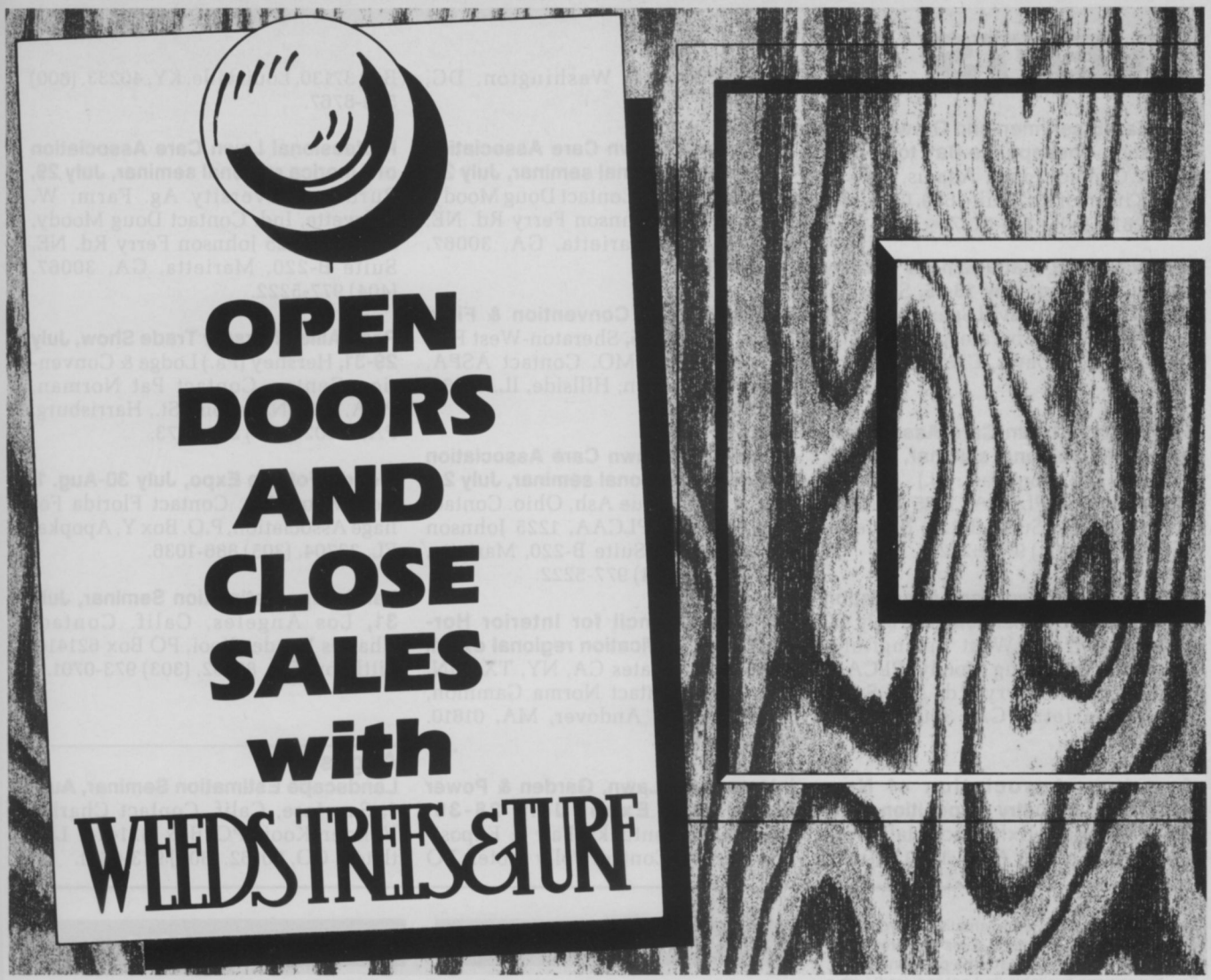
LANDSCAPE LABORERS & FOREMEN—Experience a must!! Call 404-964-9998. 7/86

Landscape Construction Foreman: Degree, experience and working knowledge of commercial landscaping to $1/2 million range required. Knowledge of equipment, turf, plants, chemicals, and irrigation imperative. Send resume and salary requirements or apply in person at Northwest Landscape Industries, 16075 S.W. Upper Boones Ferry Rd., Tigard, OR 97224. 7/86

LANDSCAPE CONSTRUCTION SUPERVISOR—Rapidly growing mid-south landscape contractor is seeking a well-trained, self-motivated individual for its new division office. Five years minimum experience with knowledge of scheduling, purchasing in multi-crew supervision. Send job and salary history to: Reinhold Landscape, 3388 Cazassa, Memphis, Tennessee 38116. 9/86

LANDSCAPE ARBORIST FOREMAN: We are seeking a person skilled in shade tree and ornamental pruning as well as landscape planting. Should be a self-motivated leader interested in doing quality work. MCA and spray license helpful. Full-time, year-round position offering top pay and a benefits package including medical, vacations, uniforms and more! Call Needham, MA, 617-444-0994 - anytime! 7/86

Landscape Architects/Supervisors (project foremen) join a nationally acclaimed firm looking to expand into its second generation Long Island area supports a high budget landscape industry. Year round employment, company benefits and continuing education available. Experienced and aggressive people send resume to: GOLDBERG & RODLER, INC., 216 East Main Street, Huntington, New York 11743. 8/86



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EVENTS

July

Florida Nurserymen and Growers Association Chesapeake Bay tour, July 13-19. Contact Linda Adams, FNGA, 5401 Kirkman Rd., Suite 650, Orlando, FL, 32819. (305) 345-8137.

Aquatic Plant Management Society annual meeting, July 13-16, Sarasota, Fla. Contact Dr. David Spencer, USDA Aquatic Weed Laboratory, University of California, Davis, CA, 95616. (916) 752-6260.

Professional Lawn Care Association of America regional seminar, July 15, Holiday Inn, Somerset, N.J. Contact Doug Moody, PLCAA, 1225 Johnson Ferry Rd. NE, Suite B-220, Marietta, GA, 30067. (404) 977-5222.

Professional Lawn Care Association of America regional seminar, July 17, Sheraton West, West Springfield, Mass. Contact Doug Moody, PLCAA, 1225 Johnson Ferry Rd. NE, Suite B-220, Marietta, GA, 30067. (404) 977-5222.

American Association of Nurserymen's Industry Exposition, July 20-22, Currigan Exhibition Hall, Denver, Colo. Contact AAN, 1250 I Street, NW, Suite 500, Washington, DC, 20005.

Professional Lawn Care Association of America regional seminar, July 22, Rochester, N.Y. Contact Doug Moody, PLCAA, 1225 Johnson Ferry Rd. NE, Suite B-220, Marietta, GA, 30067. (404) 977-5222.

ASPA Summer Convention & Field Days, July 23-25, Sheraton-West Port Inn, St. Louis, MO. Contact ASPA, 4415 W. Harrison, Hillside, IL, 60162. (312) 449-2890.

Professional Lawn Care Association of America regional seminar, July 24, Ramada Inn, Blue Ash, Ohio. Contact Doug Moody, PLCAA, 1225 Johnson Ferry Rd. NE, Suite B-220, Marietta, GA, 30067. (404) 977-5222.

National Council for Interior Horticultural Certification regional exam, July 26, (for states CA, NY, TX, MN, OH, MA). Contact Norma Gammon, 115 Abbot St., Andover, MA, 01810. (617) 475-4433.

International Lawn, Garden & Power Equipment Expo, July 28-30, Louisville, Kentucky Fair & Exposition Center. Contact Polly Moter, PO Box 37130, Louisville, KY, 40233. (800) 558-8767.

Professional Lawn Care Association of America regional seminar, July 29, Purdue University Ag. Farm, W. Lafayette, Ind. Contact Doug Moody, PLCAA, 1225 Johnson Ferry Rd. NE, Suite B-220, Marietta, GA, 30067. (404) 977-5222.

Penn Allied Nursery Trade Show, July 29-31, Hershey (Pa.) Lodge & Convention Center. Contact Pat Norman, PNA, 1924 N. Second St., Harrisburg, PA, 17102. (717) 238-1673.

Florida Foliage Expo, July 30-Aug. 1, Hollywood, Fla. Contact Florida Foliage Association, P.O. Box Y, Apopka, FL, 32704. (305) 886-1036.

Landscape Estimation Seminar, July 31, Los Angeles, Calif. Contact Charles Vander Kooi, PO Box 621414, Littleton, CO, 80162. (303) 973-0701.

August

Landscape Estimation Seminar, Aug. 1, San Jose, Calif. Contact Charles Vander Kooi, PO Box 621414, Littleton, CO, 80162. (303) 973-0701.

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Amsoil Two-Cycle oil as featured in February "Job Talk." Full line of synthetic lubricants. Dealerships available. Boyce Distributors, P.O. Box 12921, Charleston, SC 29412. (803) 762-0732. 10/86

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Circle No. 147 on Reader Inquiry Card

Dawning of a new age?

If you've been reading WEEDS TREES & TURF for the past few months, you know of inroads being made in the development of plant growth regulators (PGRs) for turf.

Monsanto's Limit was the first PGR introduced for "Class B" turf: grassy areas needing more than minimum maintenance but not as much care as a good-looking home lawn. Then, just recently, O.M. Scott & Sons began marketing Turf Growth Regulator Plus Fertilizer (see "Green Industry News") for golf course fairways in the south.

Landscape managers, though, have just seen the tip of the iceberg.

"We have perceived that the real opportunity in this area is not along highways, but on more intensely maintained turf," notes Dave Gerwitz, Monsanto project manager. "We look at Limit as being a very good first step."

"New generation" PGRs do not have many of the drawbacks of their predecessors. Indeed, some have benefits. Jeff Nuss of Kansas State University and Bob Shearman of the University of Nebraska, for example, are conducting tests on the possibility of Limit reducing evapotranspiration loss and thus slowing turf water usage. Limit has also been proven a color-enhancer. The Scott product has been shown to be a fertilizer enhancer and to reduce scalping potential, among other things.

Turfgrass PGRs could hit the residential market as early as 1988, according to some experts. Dr. Tom Watschke of Penn State University once predicted that homeowners would be able to buy PGRs in little spritzer bottles for hard-to-trim areas by 1990.

Will this mean less work for landscape management companies that specialize in mowing/maintenance? Not according to Gerwitz.

"These products will not put the mowing/maintenance person out of business," he contends. "In effect, they will allow him to do his job better."

Judging by the information imparted during recent trips to Monsanto in St. Louis and Scotts in Marysville, Ohio, it appears that the landscape manager will be seeing many more turf PGRs with many more different applications—including one for almost every situation—in the next decade.

Jerry Roche

Jerry Roche, editor

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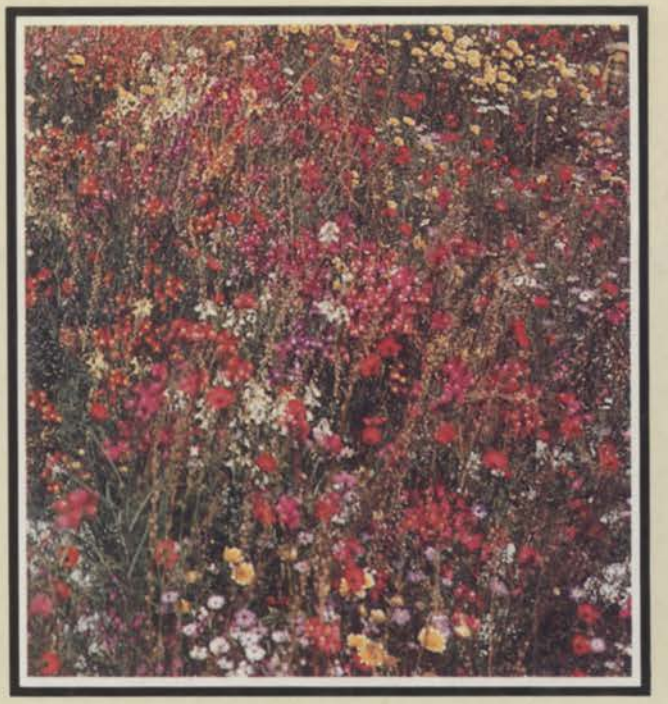

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